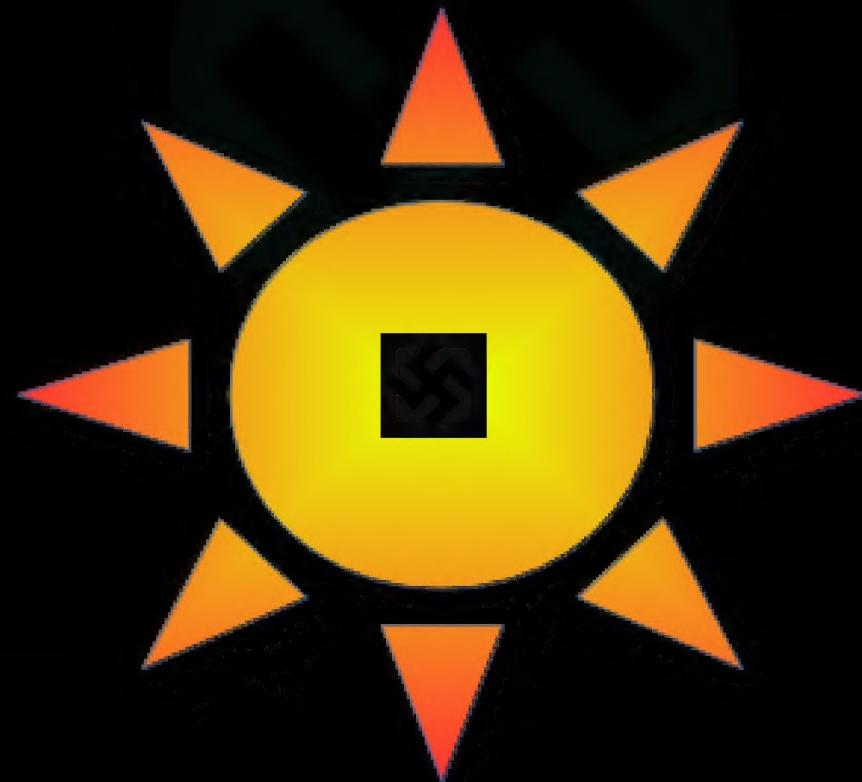


ANAND'S ATLAS OF PATHOLOGY

WEB VERSION 1.0



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- 2. Messrs Canonical Inc – The Concept, Design and the resultant work was done on Trusty Tahr**
- 3. To all my blood brothers Past, Present and Future of the 12th Battalion Assam Regiment (Wangdung) of the Indian Army**
- 4. To my family, friends, teachers and well wishers for their blessings, constant encouragement and support**
- 5. To all my students – Past, Present and Future**
- 6. To Abhinandan for laying the ground work of this Atlas**
- 7. Professor. Dr.P.M.Subramaniam without whose immense help this atlas would not have seen the light of the day**

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IDENTIFICATION OF SLIDES AND
SPECIMENS IN PATHOLOGY PRACTICAL
CLASSES**

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PROVIDED FOR EACH SLIDE / SPECIMEN**

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SHOULD BE REFERRED FOR ADDITIONAL
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TABLE OF CONTENTS

SECTION - 1 **HISTOPATHOLOGY SLIDES**

SECTION - 2 **CYTOLGY SLIDES**

SECTION - 3 **HAEMATOLOGY SLIDES**

SECTION - 4 **HISTOPATHOLOGY GROSS SPECIMENS**

SECTION - 1

HISTOPATHOLOGY SLIDES

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LIST OF COLOUR PLATES

MALIGNANT MELANOMA
SQUAMOUS CELL CARCINOMA
BASAL CELL CARCINOMA
PLEOMORPHIC ADENOMA
CIRRHOSIS OF LIVER
LOBAR PNEUMONIA
SEMINOMA TESTIS
OSTEOCLASTOMA

LIST OF COLOUR PLATES

RENAL CELL CARCINOMA

CHRONIC PYELONEPHRITIS

VESICULAR MOLE

PAPILLARY CARCINOMA OF THYROID

ADENOCARCINOMA OF STOMACH

PROLIFERATIVE ENDOMETRIUM

SECRETORY ENDOMETRIUM

BENIGN PROSTATIC HYPERPLASIA

LIST OF COLOUR PLATES

COLLOID GOITRE

LEIOMYOMA OF UTERUS

ACUTE APPENDICITIS

TUBERCULOUS LYMPHADENITIS

RHINOSPOROIDOSIS

MADURA MYCOSIS

ACTINOMYCOSIS

FIBROADENOMA OF BREAST (MIXED)

Major.Dr.

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Dr.A.Anand

MALIGNANT MELANOMA

**USUALLY PRESENTS AS A
ULCEROPIGMENTED LESION IN THE EXTREMITIES
AROUND THE 5TH DECADE
IN A VERY SHORT DURATION
(LESS THAN A MONTH)**

PIGMENTATION



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MALIGNANT MELANOMA

COMMON NEOPLASM AFFECTING THE SKIN

OTHER SITES - ORAL AND ANOGENITAL MUCOSA, OESOPHAGUS, MENINGES AND EYE

AETIOPATHOLOGY - EXPOSURE TO SUNLIGHT AND PRESENCE OF PRE EXISTING DYSPLASTIC NEVUS

CHANGE IN COLOR AND SIZE OF A PIGMENTED LESION IS A VERY IMPORTANT CLINICAL SIGN

MALIGNANT MELANOMA

ENLARGEMENT IN SIZE OF MOLE

DEVELOPMENT OF NEW PIGMENTED LESION IN ADULT LIFE

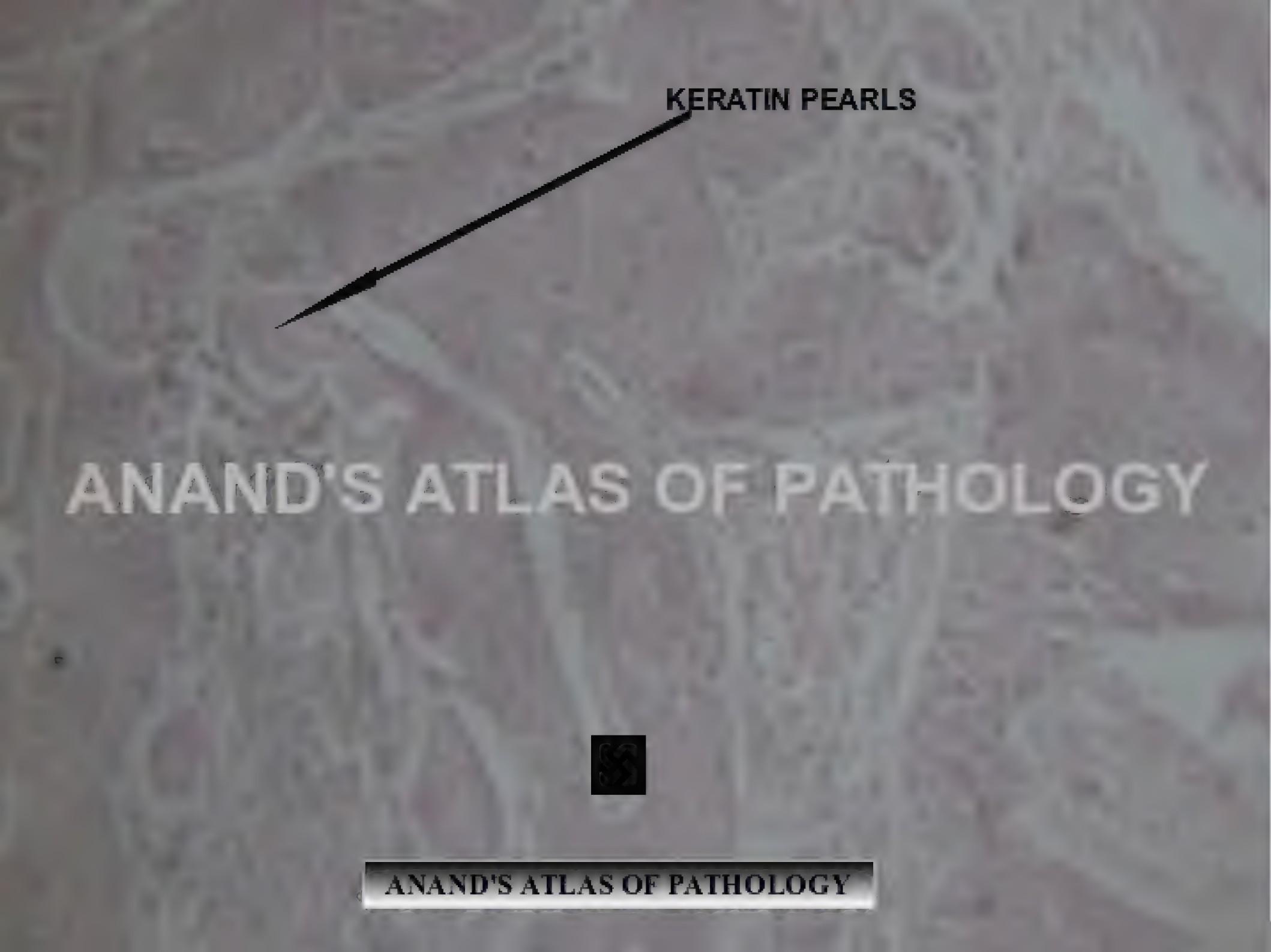
MELANOMA INITIALLY GROWS HORIZONTALLY WITHIN EPIDERMAL AND SUPERFICIAL DERMAL LAYERS

LATER IT TENDS GROW VERTICALLY INVADING DEEP

METASTASIS TO OTHER SITES LIKE LYMPH NODES, LIVER, LUNGS AND BRAIN IS BY HAEMATOGENOUS SPREAD

SQUAMOUS CELL CARCINOMA

**ULCERO PROLIFERATIVE LESION
USUALLY OCCURS IN THE EXTREMITIES
CHARACTERIZED BY CAULIFLOWER
LIKE GROWTH**



KERATIN PEARLS

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SQUAMOUS CELL CARCINOMA

SQUAMOUS CELL CARCINOMA DENOTES A CANCER IN WHICH THE TUMOUR CELLS RESEMBLE STRATIFIED SQUAMOUS EPITHELIUM

MOST COMMONEST TUMOUR ARISING ON SUN EXPOSED SITES IN OLDER PEOPLE

PREDISPOSING FACTORS - SUNLIGHT, IONISING RADIATION AND OLD BURN SCARS

OTHER SITES - CERVIX, OESOPHAGUS, ORAL CAVITY, PENIS, VAGINA AND URINARY BLADDER

SQUAMOUS CELL CARCINOMA

Major.Dr.A.Anand Major.Dr.A.Anand

**PRESENCE OF HIGHLY ATYPICAL CELLS IN
EPIDERMIS**

Major.Dr.A.Anand Major.Dr.A.Anand

**USUALLY POLYGONAL SQUAMOUS CELLS
ARRANGED IN ORDERLY LOBULES WITH LARGE
ZONES OF KERATINISATION**

Major.Dr.A.Anand Major.Dr.A.Anand

METASTASIS OCCURS TO REGIONAL LYMPH NODES

Major.Dr.A.Anand Major.Dr.A.Anand

**INDIVIDUALS WITH IMMUNOSUPPRESSION ARE
LIKELY TO DEVELOP SQUAMOUS CELL
CARCINOMAS**

Major.Dr.A.Anand Major.Dr.A.Anand

BASAL CELL CARCINOMA - RODENT ULCER

Major Dr A Anand Major Dr A Anand

Major Dr A Anand Major Dr A Anand

Major Dr A Anand Major Dr A Anand

**USUALLY CHARACTERISED BY AN ULCER EITHER IN THE
FOREHEAD OR FACE**

THE ULCER IS FIXED TO THE UNDERLYING TISSUE

**THE EDGES OF THE ULCER LOOK LIKE
AS IF THEY HAVE BEEN
GNAWED BY A RAT**

HENCE THE NAME RODENT ULCER

Major Dr A Anand Major Dr A Anand

Major Dr A Anand Major Dr A Anand



PALLISADE ARRANGEMENT OF CELLS
AROUND TUMOUR ISLANDS

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BASAL CELL CARCINOMA - RODENT ULCER

Major Dr A Anand Major Dr A Anand

SLOW GROWING TUMOUR

Major Dr A Anand Major Dr A Anand

**OCCURS AT SITES CHRONICALLY EXPOSED
TO SUNLIGHT**

Major Dr A Anand Major Dr A Anand

Major Dr A Anand Major Dr A Anand

**TUMOURS PRESENT AS PEARLY PAPULES
WITH TELANGIECTASIA**

Major Dr A Anand Major Dr A Anand

**ADVANCED LESIONS ULCERATE AND
CAUSES EXTENSIVE LOCAL INVASION**

Major Dr A Anand Major Dr A Anand

BASAL CELL CARCINOMA - RODENT ULCER

**TUMOUR CELLS RESEMBLE THOSE IN
NORMAL BASAL LAYER**

**GROWTH PATTERN CAN BE MULTIFOCAL OR
NODULAR LESIONS**

**PALLISADING ARRANGEMENT OF CELLS
AROUND TUMOUR CELL ISLANDS**

**SEPARATION ARTIFACTS ASSIST IN
DIFFERENTIATING BASAL CELL CARCINOMA
FROM OTHER TUMOURS**

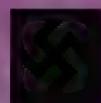
PLEOMORPHIC ADENOMA

**PLEOMORPHIC ADENOMA USUALLY
OCCURS AS A PAINLESS
GROWTH IN THE
PAROTID REGION**

TUMOUR CELLS EMBEDDED IN
LOOSE CONNECTIVE
TISSUE STROMA



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PLEOMORPHIC ADENOMA

MIXED TUMOUR OF SALIVARY GLANDS

IT IS A BENIGN EPITHELIAL NEOPLASM PRODUCING GLAND PATTERNS

A SLOW GROWING, WELL DEMARCATED, ENCAPSULATED LESION

COMMONLY AFFECTS PAROTID GLAND

CHARACTERISED BY PAINLESS SWELLING AT THE ANGLE OF THE JAW

PLEOMORPHIC ADENOMA

HISTOLOGICAL PICTURE - HETEROGENOUS APPEARANCE

TUMOUR CELLS FORM DUCTS, ACINI, TUBULES AND STRANDS OF CELLS

EPITHELIAL CELLS ARE SMALL AND DARK RANGING FROM CUBOIDAL TO SPINDLE FORMS

EPITHELIAL ELEMENTS ARE INTERMINGLED IN LOOSE MYXOID CONNECTIVE TISSUE STROMA

SOMETIMES ISLANDS OF CHONDROID OR BONE ARE SEEN

CIRRHOSIS OF LIVER

**PATIENT USUALLY IS A CHRONIC ALCOHOLIC
PRESENTING WITH HEMATEMESIS, MALENA
AND ABDOMINAL DISTENSION**

LIVER BIOPSY IS DONE

DISRUPTION OF NORMAL ARCHITECTURE OF HEPATOCYTES

BRIDGING FIBROUS SEPTA ARE SEEN

MALLORY BODY

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CIRRHOSIS OF LIVER

IT IS AN END STAGE OF CHRONIC LIVER DISEASE

CHRONIC ALCOHOLISM - FATTY LIVER

**THERE IS DISRUPTION OF NORMAL ARCHITECTURE
OF LIVER**

**BRIDGING FIBROUS SEPTA IN THE FORM OF
DELICATE BANDS OR BROAD SCARS REPLACING
MULTIPLE ADJACENT LOBULES ARE SEEN
(FIBROSIS)**

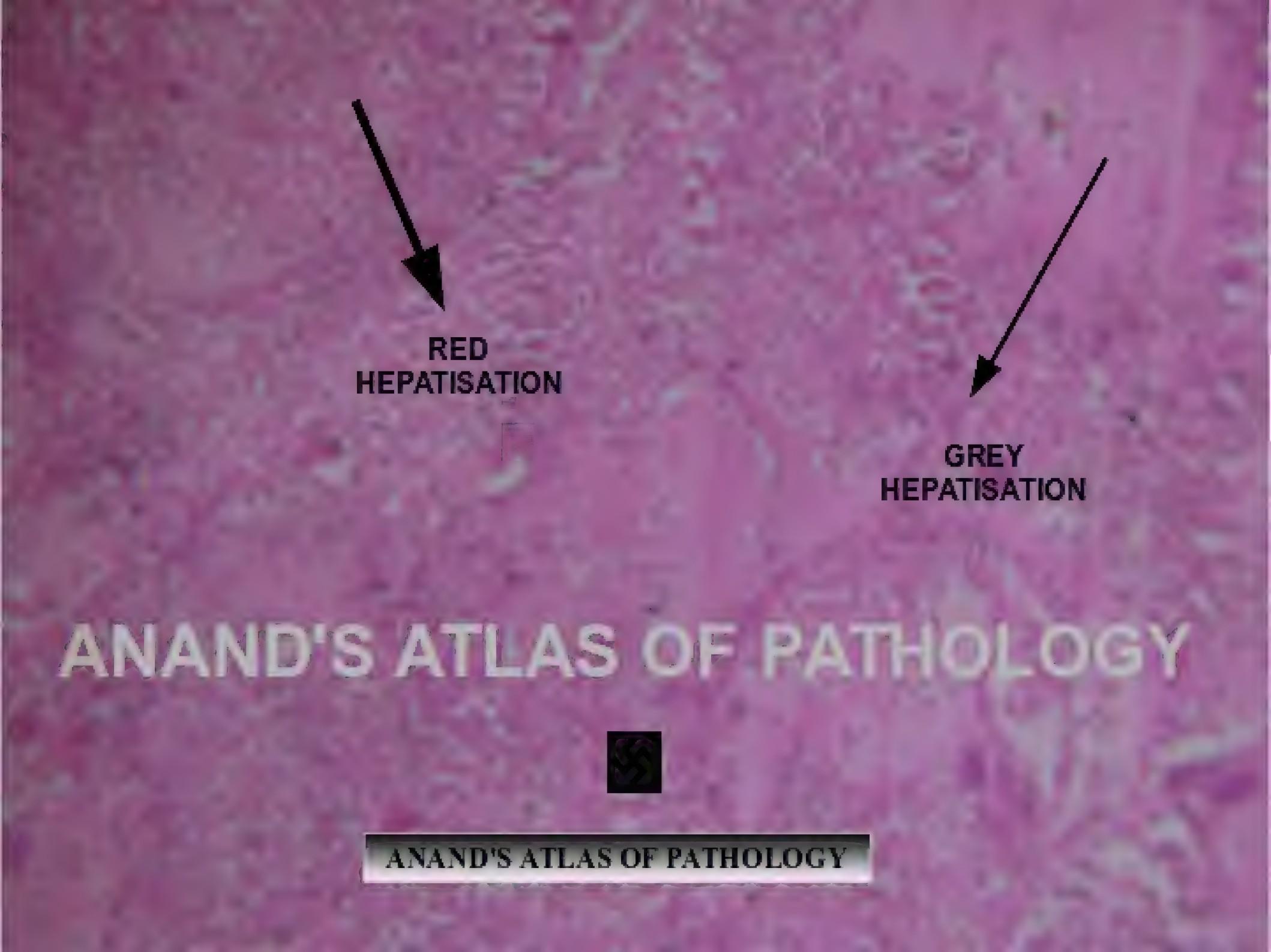
**PARENCHYMAL NODULES ARE CREATED BY
REGENERATION OF ENCIRCLED HEPATOCYTES
VARYING IN SIZE ARE SEEN**

MALLORY BODIES ARE SEEN

LOBAR PNEUMONIA

**PATIENT USUALLY PRESENTS WITH FEVER,
MALAISE, COUGH WITH EXPECTORATION
OF SPUTUM AND SEPTICEMIA IS A
PRESENTING FEATURE**

**LUNG BIOPSY IS DONE
LOBECTOMY IS DONE IN EXTREME CASES**



RED
HEPATISATION

GREY
HEPATISATION

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LOBAR PNEUMONIA

**IT IS A ACUTE BACTERIAL PNEUMONIA
USUALLY CAUSED BY STREPTOCOCCUS
PNEUMONIAE**

**EVOLUTION OF DISEASE IS THROUGH FOUR
STAGES**

**STAGE OF CONGESTION, RED HEPATISATION,
GRAY HEPATISATION AND RESOLUTION**

Major.Dr.

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Dr.A.Anand

LOBAR PNEUMONIA

IN STAGE OF RED HEPATISATION, ALVEOLAR SPACES ARE PACKED WITH NEUTROPHILS, and RED CELLS AND FIBRIN

IN STAGE OF GRAY HEPATISATION, RED CELLS GET LYSED

IN STAGE OF RESOLUTION, EXUDATES WITHIN ALVEOLI ARE ENZYMATICALLY DIGESTED AND EITHER UNDERGO RESORPTION OR IS EXPECTORATED

SEMINOMA TESTIS

**MALE PATIENT USUALLY PRESENTS
WITH A PAINLESS MASS IN
THE SCROTUM**

**TESTICULAR BIOPSY IS DONE FOR
CONFIRMATION OF DIAGNOSIS**

ORCHIDECTOMY IS DONE

LYMPHOCYTIC INFILTRATION IS SEEN



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SEMINOMA TESTIS

IT IS A GERM CELL TUMOUR

CRYPTORCHIDISM IS A COMMONLY ASSOCIATED CAUSE

IT IS COMPOSED OF LARGE CELLS WITH DISTINCT CELL BORDERS, CLEAR GLYCOGEN RICH CYTOPLASM

PRESENCE OF ROUND NUCLEI WITH CONSPICUOUS NUCLEOLI

CELLS ARE ARRANGED IN SMALL LOBULES WITH INTERVENING FIBROUS SEPTA

LYMPHOCYTIC INFILTRATION IS SEEN

GRANULOMATOUS INFLAMMATORY REACTION CAN BE PRESENT

OSTEOCLASTOMA - GIANT CELL TUMOUR

**PRESENTS AS A CYSTIC
BONY LESION**

USUALLY AROUND THE 2ND AND 3RD DECADE

LONG BONES ARE AFFECTED

**LESIONS ARE PRESENT AROUND
THE EPIPHYSIS**

OSTEOCLAST LIKE GIANT CELLS



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OSTEOCLASTOMA - GIANT CELL TUMOUR

ALSO KNOWN AS GIANT CELL TUMOUR OF BONE

THE NEOPLASM CONTAINS LARGE NUMBERS OF OSTEOCLAST LIKE GIANT CELLS ADMIXED WITH MONONUCLEAR CELLS

USUALLY ARISES FROM EPIPHYESSES OF LONG BONES

DISTAL FEMUR, PROXIMAL TIBIA, PROXIMAL HUMERUS AND DISTAL RADIUS ARE USUAL SITES

OSTEOCLASTOMA - GIANT CELL TUMOUR

**MULTINUCLEATED GIANT CELLS ARE
THE CLASSICAL HISTOLOGICAL
PICTURE**

**GIANT CELLS ARE DERIVED FROM
FUSION OF MONOCYTES**

**NEOPLASTIC COMPONENT IS MADE
OF ROUND TO SPINDLE SHAPED
MONONUCLEAR CELLS**

RENAL CELL CARCINOMA

**PATIENT PRESENTS WITH MASS
IN THE ABDOMEN**

**PAINLESS HAEMATURIA AND
COSTOVERTEBRAL PAIN**

OCCURS AFTER THE 4TH DECADE

**RENAL BIOPSY IS DONE FOR
CONFIRMATION OF DIAGNOSIS**

NEPHRECTOMY IS DONE

VACUOLATED TUMOUR CELLS



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RENAL CELL CARCINOMA

**THESE TUMOURS ARE DERIVED FROM
RENAL TUBULAR EPITHELIUM**

**HENCE THEY PREDOMINANTLY AFFECT
THE CORTEX OF THE KIDNEY**

**THREE TYPES - CLEAR CELL CARCINOMA,
PAPILLARY RENAL CELL CARCINOMA AND
CHROMOPHOBE RENAL CARCINOMA**

**CLEAR CELL CARCINOMA IS THE MOST
COMMONEST TYPE**

RENAL CELL CARCINOMA

**TUMOR CELLS APPEAR VACUOLATED DUE TO
PRESENCE OF LIPID MATERIAL AND CAN BE
DEMARCATED ONLY BY THEIR CELL MEMBRANE
THEIR NUCLEI ARE SMALL AND ROUND
ALSO SEEN ARE GRANULAR CELLS
RESEMBLING TUBULAR EPITHELIUM WHICH
HAVE SMALL ROUND REGULAR NUCLEI
ENCLOSED WITHIN GRANULAR PINK
CYTOPLASM**

**CONNECTIVE TISSUE STROMA IS USUALLY
SCANT BUT HIGHLY VASCULARISED**

CHRONIC PYELONEPHRITIS

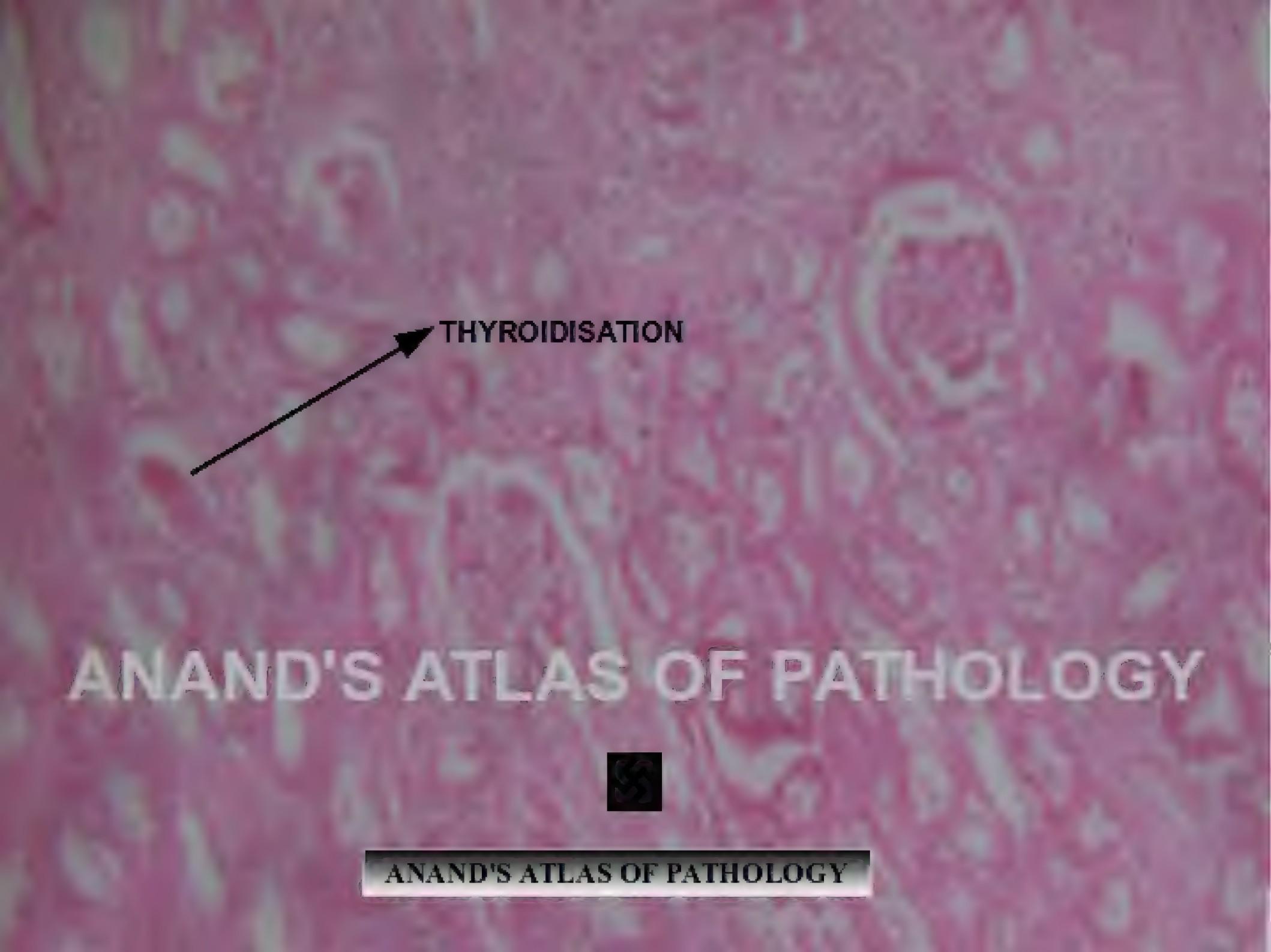
PATIENT IS A DIABETIC

**PRESENTING WITH FEVER,
MALAISE AND BACKPAIN**

PYURIA IS A PRESENTING FEATURE

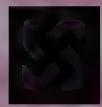
**ULTRASOUND AND RENAL BIOPSY
LEADS TO CONFIRMATION
OF DIAGNOSIS**

NEPHRECTOMY IS DONE IN EXTREME CASES



THYROIDISATION

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CHRONIC PYELONEPHRITIS

THIS CONDITION PREDOMINANTLY PRESENTS WITH INTERSTITIAL INFLAMMATION AND SCARRING OF RENAL PARENCHYMA ASSOCIATED WITH VISIBLE SCARRING AND DEFORMITY OF PELVICALYCEAL SYSTEM. UNEVEN INTERSTITIAL FIBROSIS, INFLAMMATORY INFILTRATE OF LYMPHOCYTES AND PLASMA CELLS ARE SEEN.

CHRONIC PYELONEPHRITIS

**DILATATION OR CONTRACTION OF LOBULES
WITH ATROPHY OF LINING EPITHELIUM ARE**

SEEN

**COLLOID CASTS THAT SUGGEST
APPEARANCE OF THYROID TISSUE CALLED
AS THYROIDISATION IS SEEN**

**CHRONIC INFLAMMATORY INFILTRATION
AND FIBROSIS OF CALYCEAL MUCOSA AND
WALL CAN BE VISUALISED**

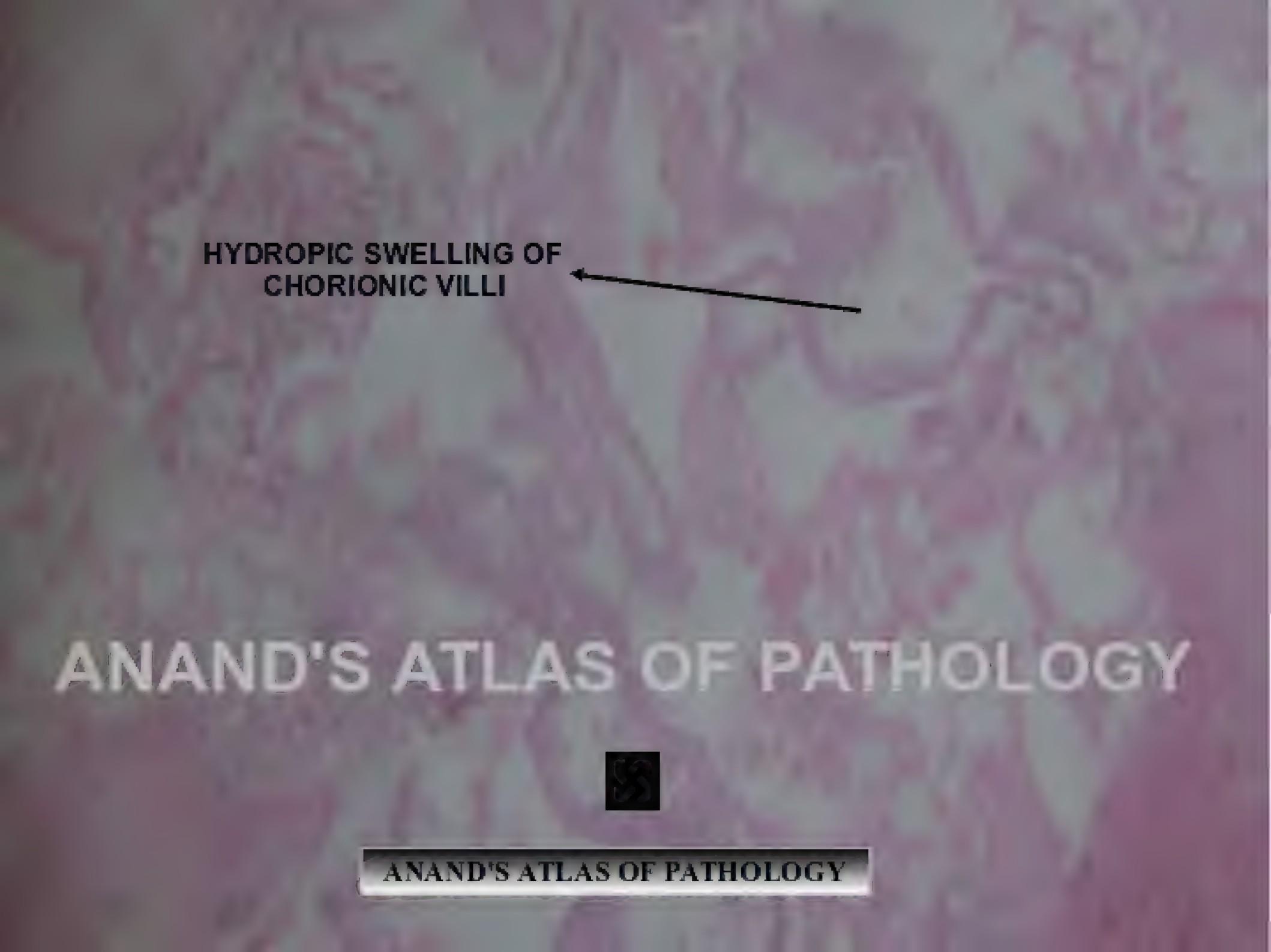
VESICULAR MOLE

**FEMALE PATIENT USUALLY PRESENTS
WITH AMENORRHOEA AND BLEEDING
PER VAGINUM**

**GROSS APPEARANCE RESEMBLES
GRAPE LIKE MASSES**

SERUM HCG LEVELS ARE ELEVATED

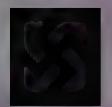
DILATATION AND CURETTAGE IS DONE



A light micrograph showing several chorionic villi. One villus in the center appears significantly larger and more pale-staining than the others, indicating hydroptic swelling. A black arrow points from the text 'HYDROPIC SWELLING OF CHORIONIC VILLI' to this enlarged villus.

**HYDROPIC SWELLING OF
CHORIONIC VILLI**

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VESICULAR MOLE

Major Dr. A. Anand Major Dr. A. Anand

IT IS A GESTATIONAL TROPHOBLASTIC DISEASE
ALSO KNOWN AS HYDATIDIFORM MOLE
IT CAN BE COMPLETE OR PARTIAL
CHARACTERISED BY VOLUMINOUS MASS OF SWOLLEN, CYSTICALLY DILATED CHORIONIC VILLI APPEARING LIKE A BUNCH OF GRAPES

Major Dr. A. Anand Major Dr. A. Anand

Major Dr. A. Anand Major Dr. A. Anand

Major Dr. A. Anand Major Dr. A. Anand

VESICULAR MOLE

**HISTOLOGICAL PICTURE - HYDROPIC SWELLING OF CHORIONIC VILLI AND ABSENCE OF VASCULARISATION OF THE VILLI
THE CENTRAL SUBSTANCE OF THE VILLI IS LOOSE MYXOMATOUS AND OEDEMATOUS STROMA**

THE CHORIONIC EPITHELIUM SHOWS SOME DEGREE OF PROLIFERATION OF CYTOTROPHOBlast AND SYNCYTiotrophoblast

PAPILLARY CARCINOMA OF THYROID

Major.Dr.A.Anand Major.Dr.A.Anand

**PRESENTS AS A SOLITARY NODULE
IN THE MIDLINE OF THE NECK**

SWELLING IS OF A SHORT DURATION

ACCOMPANIED BY HOARSENESS OF VOICE

Major.Dr.A.Anand Major.Dr.A.Anand

BIOPSY IS THE INVESTIGATIVE PROCEDURE

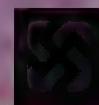
Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr. Dr.A.Anand



PSAMMOMA BODY

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PAPILLARY CARCINOMA OF THYROID

MOST COMMON FORM OF THYROID

MALIGNANCY

**NUCLEI OF MALIGNANT CELLS CONTAIN
FINELY DISPERSED CHROMATIN
PRESENTING A GROUND GLASS**

APPEARANCE

**PAPILLARY ARCHITECTURE IS PRESENT
NEOPLASTIC PAPILLAE HAVE DENSE
FIBROVASCULAR CORES**

PAPILLARY CARCINOMA OF THYROID

**CONCENTRICALLY CALCIFIED
STRUCTURES CALLED AS
PSAMMOMA BODIES ARE PRESENT
WITHIN THE PAPILLAE
SOME TUMOURS ARE COMPOSED
PREDOMINANTLY OF FOLLICLES
ONLY
METASTASIS IS USUALLY TO THE
ADJACENT LYMPH NODES**

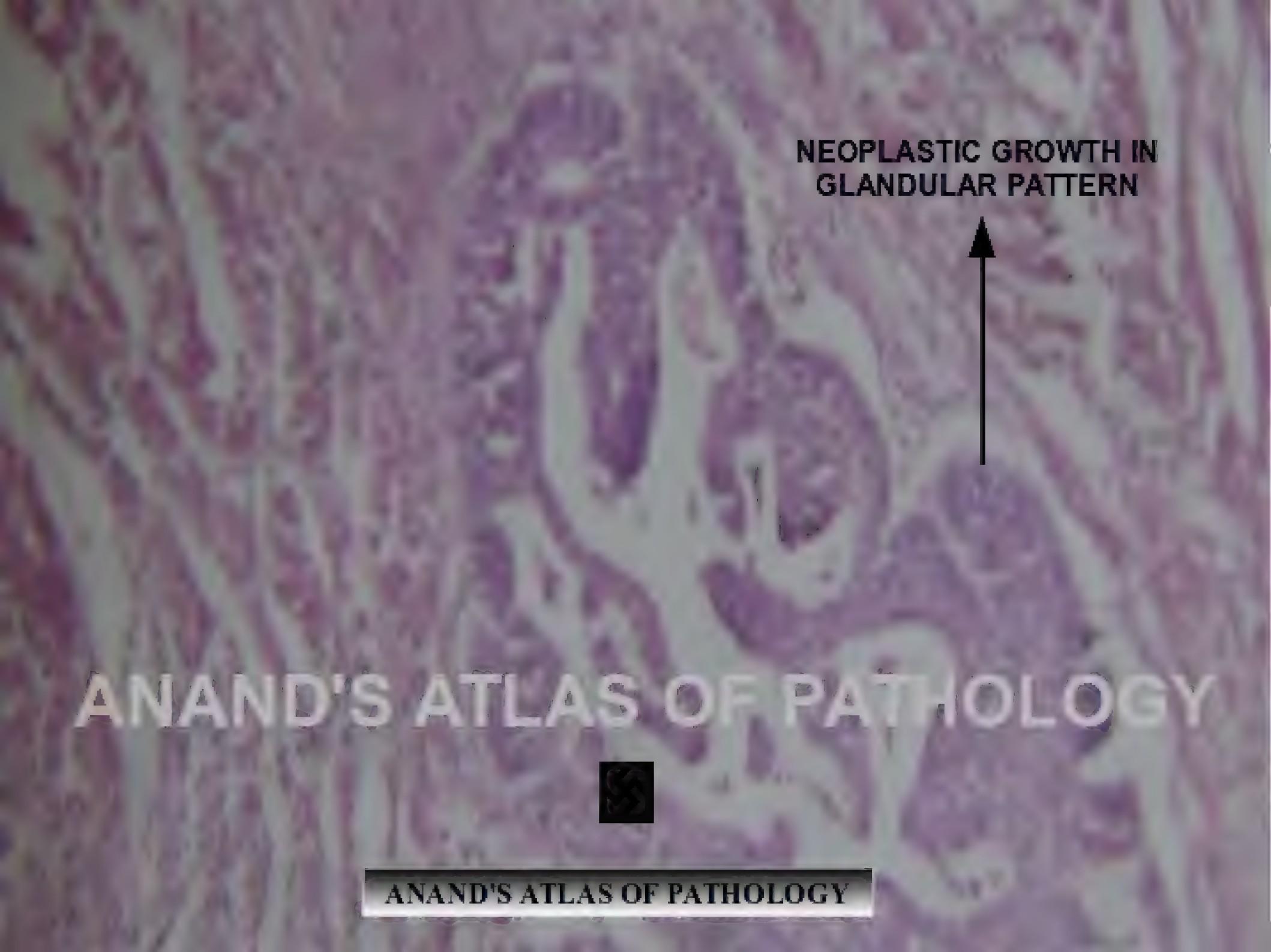
ADENOCARCINOMA OF STOMACH

Major Dr A Anand Major Dr A Anand

**PATIENT PRESENTS WITH SEVERE PAIN IN
THE ABDOMEN, LOSS OF APETITE AND
WEIGHT LOSS**

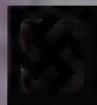
BIOPSY IS CONFIRMATORY

**PARTIAL OR SUBTOTAL
GASTRECTOMY IS DONE**

A light micrograph showing a tissue sample with a prominent glandular architecture. The glandular structures are lined by epithelial cells with dark purple nuclei. A thick black arrow points upwards from the bottom right towards the text.

NEOPLASTIC GROWTH IN
GLANDULAR PATTERN

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ADENOCARCINOMA OF STOMACH

Major.Dr.A.Anand Major.Dr.A.Anand

**ADENOCARCINOMA IS A LESION IN WHICH
NEOPLASTIC EPITHELIAL CELLS GROW IN
GLAND PATTERNS**

**IN EARLY STAGE THE LESION IS CONFINED TO
MUCOSA AND SUBMUCOSA**

**IN ADVANCED STAGE THE LESION EXTENDS
BELOW THE SUBMUCOSA INTO THE
MUSCULAR WALL**

**METASTASIS - LYMPHATIC SPREAD - LEFT
SUPRACLAVICULAR LYMPHADENITIS -
VIRCHOW'S NODES**

Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr. Dr.A.Anand

ADENOCARCINOMA OF STOMACH

Major Dr A Anand Major Dr A Anand

**HISTOLOGICAL TYPES - INTESTINAL AND
DIFFUSE VARIANTS**

**INTESTINAL - MALIGNANT CELLS
FORMING NEOPLASTIC INTESTINAL
GLANDS RESEMBLING COLONIC
ADENOCARCINOMA**

**DIFFUSE - GASTRIC TYPE MUCOSAL
CELLS, THEY DO NOT FORM GLANDS -
SIGNET RING CELLS ARE SEEN**

**TRANSCOELOMIC SPREAD - TO OVARIES
CAUSES KRUKENBERG'S TUMOUR**

Major Dr

PROLIFERATIVE ENDOMETRIUM

Major Dr A Anand Major Dr A Anand

**FEMALE PATIENT PRESENTS
WITH HISTORY OF INFERTILITY**

**ENDOMETRIAL BIOPSY AND
CURETTAGE IS DONE**

EPITHELIAL CELLS

ENDOMETRIAL CRYPT

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PROLIFERATIVE ENDOMETRIUM

Major Dr A Anand Major Dr A Anand

IT IS THE OESTROGEN PHASE OF THE OVARIAN CYCLE

AFTER MENSTRUATION ONLY A THIN LAYER OF ENDOMETRIAL STROMA LIES AT THE BASE OF ORIGINAL ENDOMETRIUM

ONLY EPITHELIAL CELLS ARE LEFT IN THE REMAINING DEEP PORTIONS OF GLANDS AND CRYPTS OF ENDOMETRIUM

THE STROMAL CELLS AND EPITHELIAL CELLS PROLIFERATE RAPIDLY UNDER THE INFLUENCE OF OESTROGEN

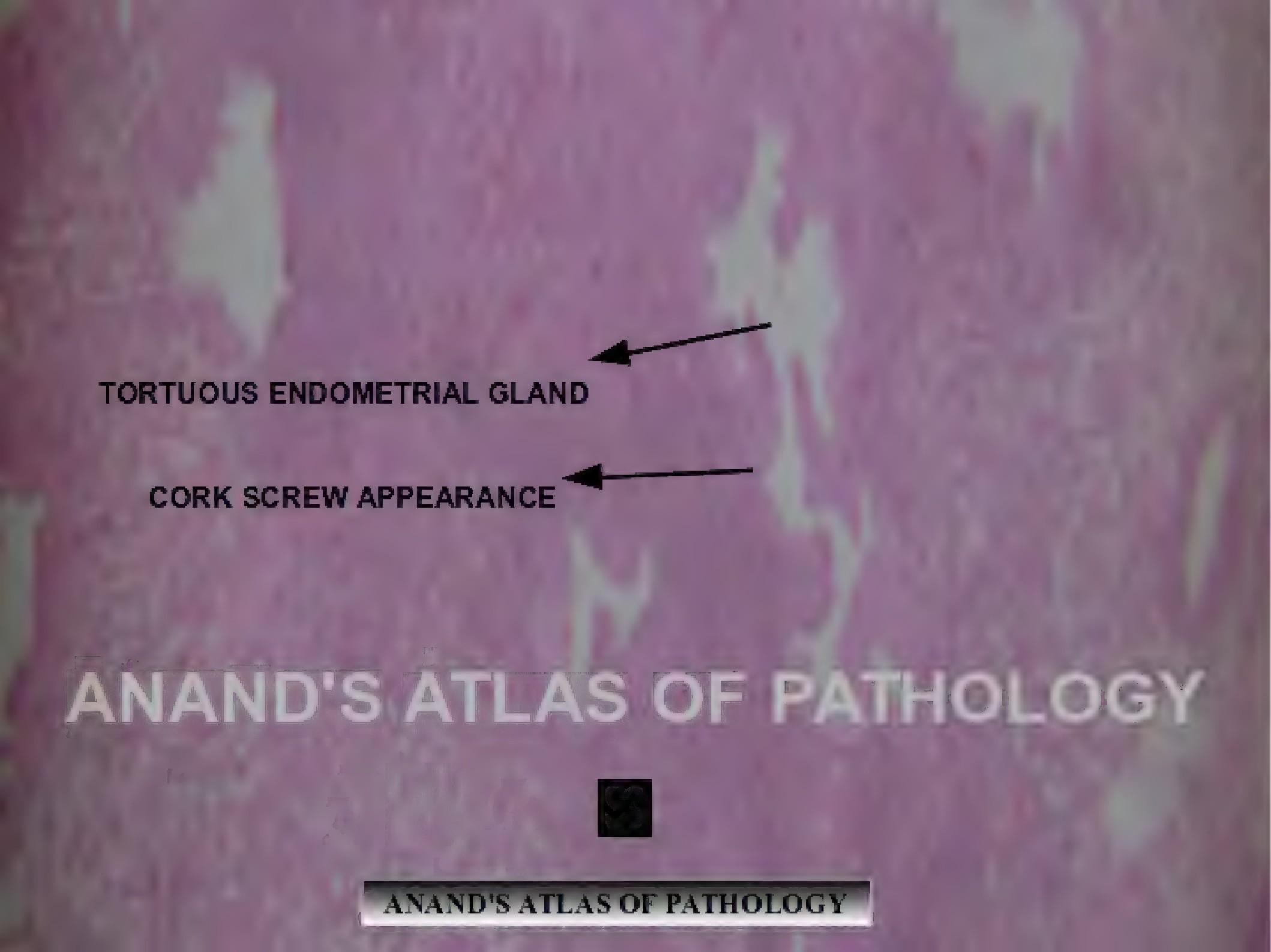
Major Dr.

SECRETORY ENDOMETRIUM

Major.Dr.A.Anand Major.Dr.A.Anand

**RELATIVELY YOUNG FEMALE
PATIENT PRESENTS WITH
HISTORY OF INFERTILITY**

**PREMENSTRUAL ENDOMETRIAL
CURETTAGE IS DONE**



TORTUOUS ENDOMETRIAL GLAND

CORK SCREW APPEARANCE

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SECRETORY ENDOMETRIUM

Major Dr A Anand Major Dr A Anand

IT IS THE PROGESTERONE PHASE OF THE OVARIAN CYCLE

THE ENDOMETRIAL GLANDS INCREASE IN TORTUOSITY PRESENTING A CORK SCREW APPEARANCE

EXCESS OF SECRETORY SUBSTANCES ACCUMULATE IN THE GLANDULAR EPITHELIAL CELLS

CYTOPLASM OF THE STROMAL CELLS ALSO INCREASE

THERE IS ALSO AN INCREASE OF LIPID AND GLYCOGEN DEPOSITS IN THE STROMAL CELLS

Major Dr.

ANAND'S ATLAS OF PATHOLOGY

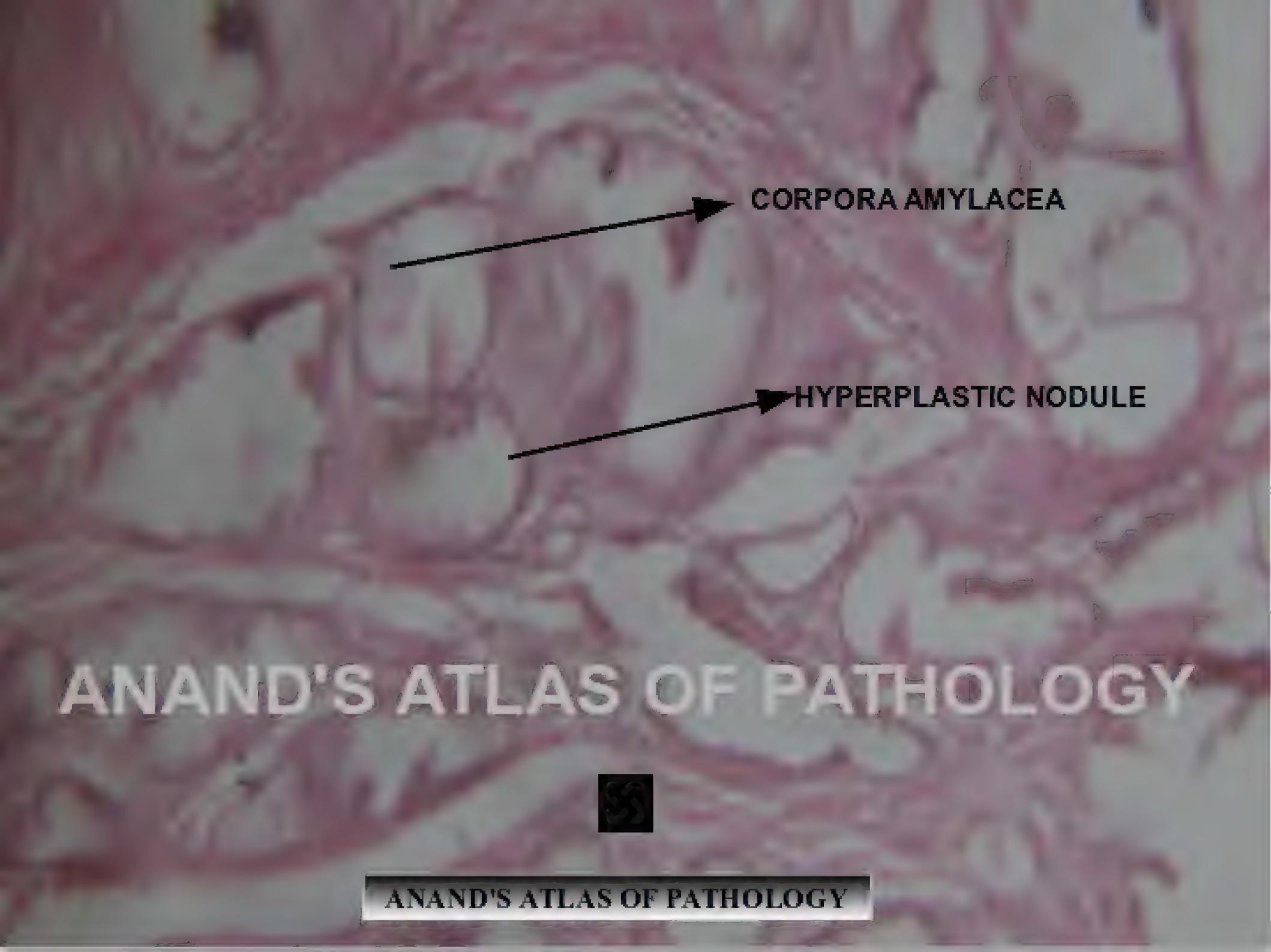
Dr. A. Anand

BENIGN HYPERPLASIA OF PROSTATE

**PATIENT IS USUALLY AN ELDERLY MALE IN THE
6TH DECADE OF LIFE**

**PRESENTING COMPLAINTS INCLUDE FREQUENT
MICTURITION, URGENCY,
DРИBBLING DROPLETS OF URINE
AND PAIN**

PROSTATECTOMY IS DONE



CORPORA AMYLACEA

HYPERPLASTIC NODULE

ANAND'S ATLAS OF PATHOLOGY



ANAND'S ATLAS OF PATHOLOGY

BENIGN HYPERPLASIA OF PROSTATE

**ALSO KNOWN AS NODULAR HYPERPLASIA,
GLANDULAR AND STROMAL HYPERPLASIA
CHARACTERISED BY PROLIFERATION OF
EPITHELIAL AND STROMAL ELEMENTS
RESULTING IN ENLARGEMENT OF THE
GLAND**

**ENLARGEMENT RESULTS IN URINARY
OBSTRUCTION**

**ANDROGENS AND OESTROGENS PLAY A
SYNERGISTIC ROLE IN DEVELOPMENT OF
THIS CONDITION**

BENIGN HYPERPLASIA OF PROSTATE

IT ARISES FROM THE PERIURETHRAL GLANDS OF THE PROSTATE

HYPERPLASTIC NODULES ARE COMPOSED OF VARYING PROPORTIONS OF PROLIFERATING GLANDULAR ELEMENTS AND FIBROMUSCULAR STROMA

HYPERPLASTIC GLANDS ARE LINED BY TALL COLUMNAR CELLS AND A PERIPHERAL LAYER OF FLATTENED BASAL CELLS

GLANDULAR LUMEN USUALLY CONTAINS A PROTINACEOUS SECRETORY MATERIAL CALLED AS CORPORA AMYLACEA

COLLOID GOITRE

PREDOMINANTLY SEEN IN YOUNG FEMALES

**PRESENTS AS GLOBULAR SWELLING
OF THE THYROID GLAND
OF LONG STANDING DURATION**

BIOPSY IS CONFIRMATORY

EXCISION OF MASS IS DONE

CUT SECTION OF MASS REVEALS BROWNISH COLLOID

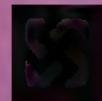
COLLOID RICH THYROID FOLLICLE



EPITHELIUM OF THYROID FOLLICLE



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COLLOID GOITRE

GOITRE IS A SIMPLE ENLARGEMENT OF THYROID GLAND

**IT IS THE MOST COMMON THYROID DISEASE
IF DIETARY IODINE INCREASES OR DEMANDS FOR THYROID HORMONE DECREASES, THE STIMULATED FOLLICULAR EPITHELIUM INVOLUTES TO FORM AN ENLARGED COLLOID RICH GLAND CALLED AS COLLOID GOITRE**

THE FOLLICULAR EPITHELIUM IS HYPERPLASTIC AND MAY BE FLATTENED OR CUBOIDAL DEPENDING ON THE LEVEL OF COLLOID

LEIOMYOMA OF UTERUS (FIBROID UTERUS)

**FEMALE PATIENT PRESENTS
WITH COMPLAINTS OF MENORRHAGIA
URINARY DISTURBANCE AND LOW BACK ACHE**

**ULTRASONOGRAPHY REVEALS MASS IN
THE UTERINE WALLS**

MAY BE SINGLE OR MULTIPLE

OCCURS AROUND THE 4TH DECADE

**HYSTERECTOMY IS A PREFERRED
TREATMENT MODALITY**

WHORLING BUNDLES OF SMOOTH MUSCLE CELLS



ANAND'S ATLAS OF PATHOLOGY



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LEIOMYOMA OF UTERUS (FIBROID UTERUS)

BENIGN TUMOUR ARISING FROM SMOOTH MUSCLE CELLS IN THE MYOMETRIUM OF UTERUS ARE TERMED AS LEIOMYOMAS ALSO CALLED AS FIBROID UTERUS

MICROSCOPICALLY IT SHOWS WHORLING BUNDLES OF SMOOTH MUSCLE CELLS DUPLICATING THE ARCHITECTURE OF NORMAL MYOMETRIUM

FOCI OF FIBROSIS, CALCIFICATION, ISCHAEMIC NECROSIS, CYSTIC DEGENERATION AND HAEMORRHAGE MAY BE PRESENT

ACUTE APPENDICITIS

**YOUNG INDIVIDUAL PRESENTS WITH
SUDDEN ONSET OF FEVER, VOMITTING
AND ABDOMINAL PAIN**

**TENDERNESS IS PRESENT IN THE
RIGHT ILIAC FOSSA**

BLOOD SMEAR REVEALS NEUTROPHILIA

**ULTRASONOGRAPHY REVEALS AN ENLARGED
AND INFLAMED APPENDIX**

APPENDICECTOMY IS DONE

A histological slide showing a tissue sample. A large area of pinkish-red, granular tissue is labeled "TISSUE NECROSIS". A black arrow points from the text to this area.

TISSUE NECROSIS

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ACUTE APPENDICITIS

IN EARLY STAGES SCANT NEUTROPHILIC EXUDATES WILL BE FOUND IN THE COATS OF THE APPENDIX

THE INFLAMMATORY REACTION TRANSFORMS NORMAL GLISTENING SEROSA INTO A DULL, GRANULAR RED MEMBRANE

IN LATER STAGES, PROMINENT NEUTROPHILIC EXUDATE GENERATES A FIBROPURULENT REACTION OVER SEROSA

THIS LEADS TO AN ABSCESS FORMATION

ACUTE APPENDICITIS

**ABSCCESS FORMATION WITHIN THE
WALLS LEADS TO ULCERATIONS AND
FOCI OF NECROSIS IN THE MUCOSA**

**FURTHER DETERIORATION RESULTS
IN GANGRENOUS NECROSIS OF
APPENDICULAR MUCOSA**

TUBERCULOUS LYMPHADENITIS

Major Dr A Anand Major Dr A Anand

**PATIENT PRESENTS WITH
HISTORY OF TUBECULOSIS**

**MULTIPLE SWELLINGS / ENLARGEMENT
OF LYMPH NODES IN THE NECK**

**CERVICAL GROUP OF LYMPH NODES
ARE ENLARGED**

**LYMPH NODE EXCISION BIOPSY
IS CONFIRMATORY**



GRANULOMA

ANAND'S ATLAS OF PATHOLOGY



ANAND'S ATLAS OF PATHOLOGY

TUBERCULOUS LYMPHADENITIS

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**SECONDARY INFLAMMATION OF
DRAINING LYMPH NODES IS CALLED
AS LYMPHADENITIS**

**IT IS THE COMMONEST FORM OF
EXTRAPULMONARY TUBERCULOSIS**

**USUALLY OCCURS IN THE CERVICAL
REGION - SCROFULA**

Major Dr.

TUBERCULOUS LYMPHADENITIS

Major Dr A Anand Major Dr A Anand

AFFECTED LYMPH NODES SHOW

GRANULOMATOUS INFLAMMATORY

REACTION

**MAY FORM CASEATING OR NON CASEATING
TUBERCLES**

**GRANULOMAS ARE ENCLOSED WITHIN A
FIBROELASTIC RIM PUNCTUATED BY
LYMPHOCYTES**

**MULTINUCLEATED GIANT CELLS WILL BE
PRESENT IN THE GRANULOMAS**

RHINOSPOROIDOSIS

**COMMONLY OCCURS IN YOUNG
INDIVIDUALS**

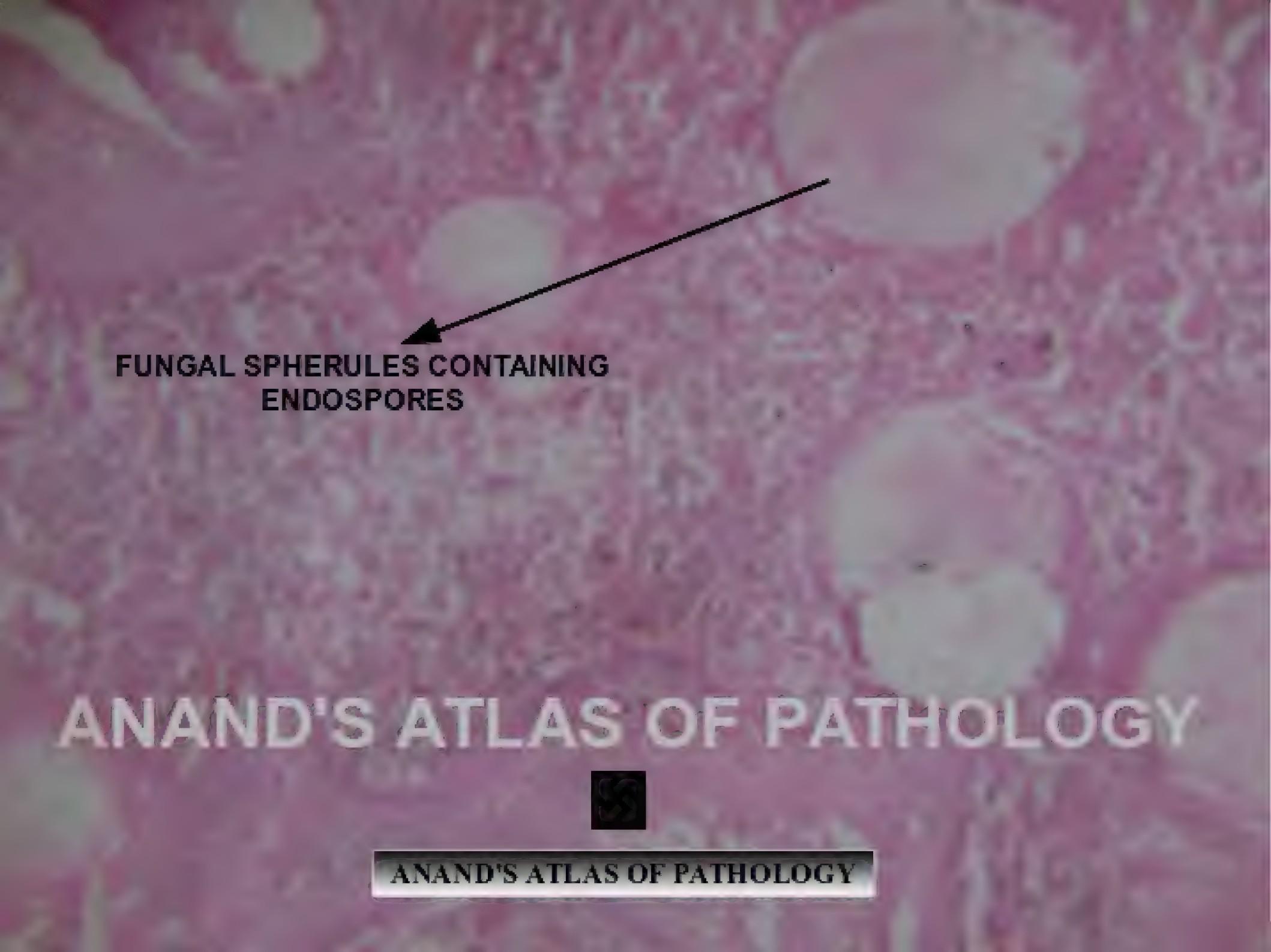
PRESENTS AS A POLYP IN THE NOSE

USUALLY INFECTION SPREADS

**WHO COME IN CONTACT
WITH WATER BODIES LIKE
SWIMMING**

POLYPECTOMY IS DONE

EXCISION BIOPSY IS CONFIRMATORY



A black arrow points from the text "FUNGAL SPHERULES CONTAINING ENDOSPORES" to a large, pale-staining, circular structure within the tissue, which is identified as a fungal spherule containing endospores.

**FUNGAL SPHERULES CONTAINING
ENDOSPORES**

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RHINOSPOROIDOSIS

IT IS A CHRONIC GRANULOMATOUS DISEASE

A TYPE OF SUBCUTANEOUS MYCOSES

**CAUSATIVE FUNGUS IS RHINOSPORIDIUM
SEEBERI**

**MODE OF INFECTION IS NOT KNOWN BUT
THOUGHT TO ORIGINATE FROM STAGNANT
WATER OR AQUATIC LIFE**

**FUNGUS HAS NOT BEEN CULTIVATED IN A
LABORATORY**

RHINOSPOROIDOSIS

**CHARACTERISED BY DEVELOPMENT OF
FRIABLE POLYPS CONFINED TO NOSE,
MOUTH OR EYE**

**DISEASE IS LIMITED TO THE MUCOUS
MEMBRANES**
**MICROSCOPICALLY LESION SHOWS LARGE
NUMBERS OF FUNGAL SPHERULES
EMBEDDED IN A STROMA OF CONNECTIVE
TISSUE AND CAPILLARIES**

**THE SPHERULES CONTAIN THOUSANDS OF
ENDOSPORES**

MADURA MYCOSIS

OCCURS IN AGRICULTURAL WORKERS

ALSO KNOWN AS MADURA FOOT

HISTORY OF A PENETRATING INJURY IS PRESENT

**PATIENT PRESENTS WITH A MASS
IN THE FOOT WITH MULTIPLE
DISCHARGING SINUSES**

EXCISION BIOPSY IS DONE

A light micrograph of tissue sections stained with hematoxylin. A large, irregularly shaped, pale-staining area is visible on the left side. Several dark, reddish-brown, granular structures are scattered throughout the tissue, with one prominent one near the center. A black arrow points from the text to one of these granules.

FUNGAL GRANULES CONTAINING
MADURELLA MYCETOMI

ANAND'S ATLAS OF PATHOLOGY



MADURA MYCOSIS

IT IS A TYPE OF SUBCUTANEOUS MYCOSES

DISEASE FIRST REPORTED FROM MADURAI

IN 1842

**IT IS A CHRONIC SLOWLY PROGRESSING
FUNGAL INFECTION OF THE
SUBCUTANEOUS TISSUE**

**CAUSATIVE ORGANISM IS BELIEVED TO
ENTER THROUGH A MINOR TRAUMA**

ORGANISM IS MADURELLA MYCETOMI

Major.Dr.

MADURA MYCOSIS

DISEASE USUALLY BEGINS AS A SWELLING IN THE FOOT
IT BURROWS INTO DEEPER TISSUES AND RESULTS IN MULTIPLE DISCHARGING SINUSES
MICROSCOPICALLY MICROCOLONIES OF AETIOLOGICAL AGENTS IN THE FORM OF GRANULES OR GRAINS CAN BE DEMONSTRATED

ACTINOMYCOSIS

PREDOMINANTLY SEEN IN FEMALES

**PRESENTS AS A MASS AROUND
THE CHEEKS AND THE JAW**

**MASS CONTAINS MULTIPLE
DISCHARGING SINUSES**

BIOPSY IS CONFIRMATORY



► CLUB SHAPED
GRANULES CONTAINING
BACTERIAL FILAMENTS

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ACTINOMYCOSIS

Major Dr A Anand Major Dr A Anand

**IT IS A CHRONIC GRANULOMATOUS INFECTION
CHARACTERISED BY INDURATED SWELLINGS;
SUPPURATION AND DISCHARGE OF SULPHUR
GRANULES**

**PRESENCE OF MULTIPLE DISCHARGING
SINUSES**

**CERVICOFACIAL TYPE PRESENTS WITH
INDURATED LESIONS ON THE CHEEK AND
SUBMAXILLARY REGIONS**

**ACTINOMYCOSES CAN ALSO PRESENT AS A
MYCETOMA**

Major Dr.

ANAND'S ATLAS OF PATHOLOGY

Dr. A. Anand

Major

ACTINOMYCOSIS

Major

Dr. A. Anand

Major

Dr. A. Anand

**MICROSCOPICALLY THE GRANULES ARE
BACTERIAL COLONIES WITH DENSE
NETWORK OF FILAMENTS SURROUNDED BY
A PERIPHERAL ZONE OF SWOLLEN
RADIATING CLUB SHAPED STRUCTURES
THIS IS SUN RAY APPEARANCE**

**THE CLUBS ARE FORMED BY DEPOSITION
OF LIPOID MATERIAL AROUND THE
BACTERIAL FILAMENTS AS A PART OF
TISSUE REACTION**

Major

Dr. A. Anand

Major

Dr. A. Anand

Major

Dr. A. Anand

FIBROADENOMA - MIXED

OCCURS IN YOUNG FEMALES

**PRESENTS AS A FREELY MOBILE MASS
IN THE BREAST**

ALSO KNOWN AS THE BREAST MOUSE

FNAC IS DONE

EXCISION BIOPSY IS DONE



FIBROELASTIC STROMA

GLANDULAR SPACE

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FIBROADENOMA - MIXED

FIBROADENOMA OF BREAST IS A COMMON MIXED TUMOUR

IT IS ALWAYS BENIGN, RARELY UNDERGOES MALIGNANT CHANGE

TUMOUR CONTAINS A MIXTURE OF PROLIFERATED DUCTAL ELEMENTS (ADENOMA) EMBEDDED IN A LOOSE FIBROUS TISSUE (FIBROMA)

IT APPEARS IN YOUNG WOMEN AND AN INCREASE IN OESTROGEN ACTIVITY IS THOUGHT TO PLAY A ROLE IN ITS DEVELOPMENT

FIBROADENOMA - MIXED

HISTOLOGICALLY THERE IS A LOOSE FIBROELASTIC STROMA CONTAINING DUCT LIKE EPITHELIUM LINED SPACES OF VARIOUS FORMS AND SIZES THESE GLANDULAR SPACES ARE LINED WITH SINGLE OR MULTIPLE LAYERS OF CELLS AND HAVE A WELL DEFINED INTACT BASEMENT MEMBRANE

SECTION - 2

Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr.A.Anand Major.Dr.A.Anand

Major.**CYTOLOGY SLIDES** Major.Dr.A.Anand

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LIST OF COLOUR PLATES

CARCINOMA OF BREAST

**ASCITIC FLUID - SECONDARY
DEPOSITS**

CARCINOMA OF BREAST

OCCURS PREDOMINANTLY IN FEMALES

RARELY CAN OCCUR IN MALES ALSO

USUALLY PRESENTS AROUND THE 5TH DECADE

DIFFUSE MASS PRESENT IN THE BREAST

REGIONAL LYMPHADENITIS IS PRESENT

**SKIN OVER THE BREAST RESEMBLES
AN ORANGE PEEL (**PEAU D'ORANGE**)**

NIPPLE IS RETRACTED

FNAC IS THE CHOICE OF INVESTIGATION

MASTECTOMY IS DONE



A histological slide showing a cluster of papillary thyroid carcinoma cells. The cells are arranged in a papillary pattern, characterized by long, thin, finger-like projections (papillae) that are covered by a single layer of cells. In some areas, these papillae appear to have a double layer of cells, which is a key diagnostic feature of this tumor type. The background shows a dense infiltrate of lymphocytes.

DOUBLE LAYERED
PAPILLAE

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CARCINOMA OF BREAST

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**FINE NEEDLE ASPIRATION CYTOLOGY IS A
LABORATORY METHOD FOR DIAGNOSIS OF
MALIGNANCY**

**INVOLVES ASPIRATION OF CELLS FROM A MASS
FOLLOWED BY CYTOLOGICAL EXAMINATION OF
THE SMEAR
DONE USUALLY IN PATIENTS NOT FIT FOR OPEN
BIOPSY**

**CARCINOMA BREAST IS NOT COMMON IN
WOMEN BELOW THE AGE OF 30 YEARS**

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CARCINOMA OF BREAST

Major Dr A Anand Major Dr A Anand

FEATURES COMMON TO ALL INVASIVE CANCERS

BREAST LUMP

FIXITY TO CHEST WALL

RETRACTION OR DIMPLING OF NIPPLE

LYMPHOEDEMA

PEAU D'ORANGE - THICKENING OF

SKIN AROUND EXAGGERATED HAIR FOLLICLES

Major.Dr

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Dr.A.Anand

ASCITIC FLUID - SECONDARY DEPOSITS

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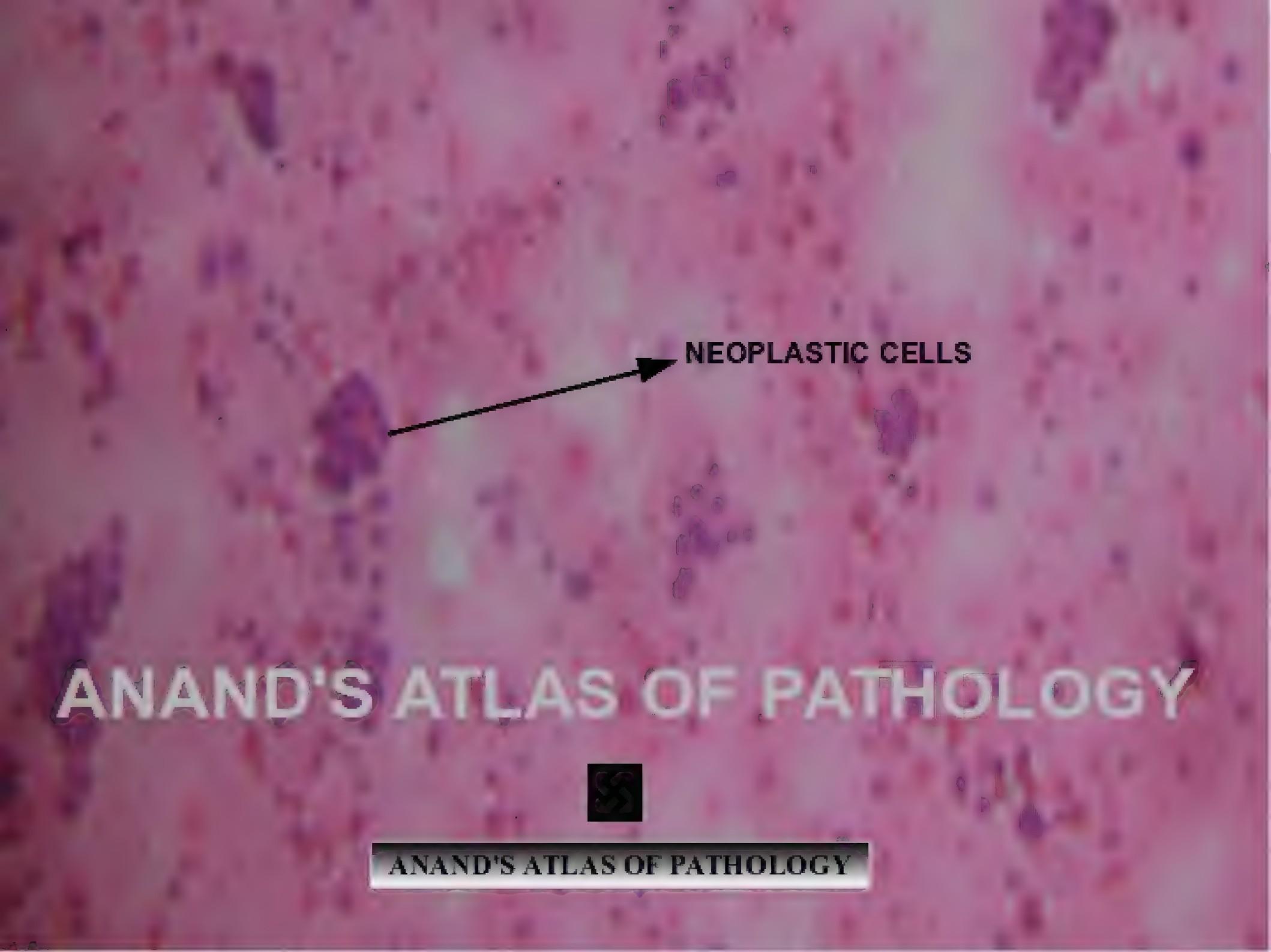
**ASCITES – COLLECTION OF FLUID IN THE
GENERAL PERITONEAL CAVITY**

**THIS COLLECTION CAN BE SECONDARY TO
LIVER DYSFUNCTION OR MAY BE
DUE TO MALIGNANCY IN PELVIC ORGANS**

**THIS CASE PERTAINS TO MASS IN THE OVARY
IN A WOMAN IN THE 7TH DECADE**

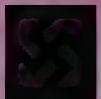
THE ASPIRATED FLUID WAS HAEMORRHAGIC

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NEOPLASTIC CELLS

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ASCITIC FLUID – SECONDARY DEPOSITS

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INCREASED FLUID IN INTERSTITIAL TISSUE SPACES IS TERMED AS OEDEMA

ACCUMULATION OF FLUID IN THE GENERAL PERITONEAL CAVITY IS TERMED AS HYDROPERITONEUM OR ASCITIS

ASCITIC FLUID ASPIRATION AND CYTOLOGICAL SMEAR PREPARATION IS A LABORATORY METHOD FOR DIAGNOSIS OF NEOPLASIA

PRIMARY IN THIS CASE - OVARIAN MALIGNANCY

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ASCITIC FLUID - SECONDARY DEPOSITS

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ASCITIC FLUID ASPIRATION AND CYTOLOGY IS

DONE FOR DIAGNOSING PRIMARY SITE OF

MALIGNANCY - FLUID IS USUALLY HAEMORRHAGIC

PROBABLE SITES OF MALIGNANCY -

**ENDOMETRIUM OF UTERUS, LUNGS, URINARY
BLADDER, PROSTATE AND STOMACH**

NEOPLASTIC CELLS ARE LESS COHESIVE THAN

NORMAL CELLS HENCE THEY ARE SHED INTO BODY

FLUIDS - EXFOLIATION

SHED CELLS ARE EVALUATED FOR FEATURES OF

ANAPLASIA INDICATIVE OF THEIR ORIGIN OF

CANCER

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ANAND'S ATLAS OF PATHOLOGY

Dr.A.Anand

SECTION - 3

HAEMATOLOGY SLIDES

LIST OF COLOUR PLATES

IRON DEFICIENCY ANAEMIA

NEUTROPHILIA

EOSINOPHILIA

ACUTE MYELOID LEUKEMIA

ACUTE LYMPHOCYTIC LEUKEMIA

CHRONIC MYELOID LEUKEMIA

CHRONIC LYMPHOCYTIC LEUKEMIA

MULTIPLE MYELOMA

IRON DEFICIENCY ANAEMIA

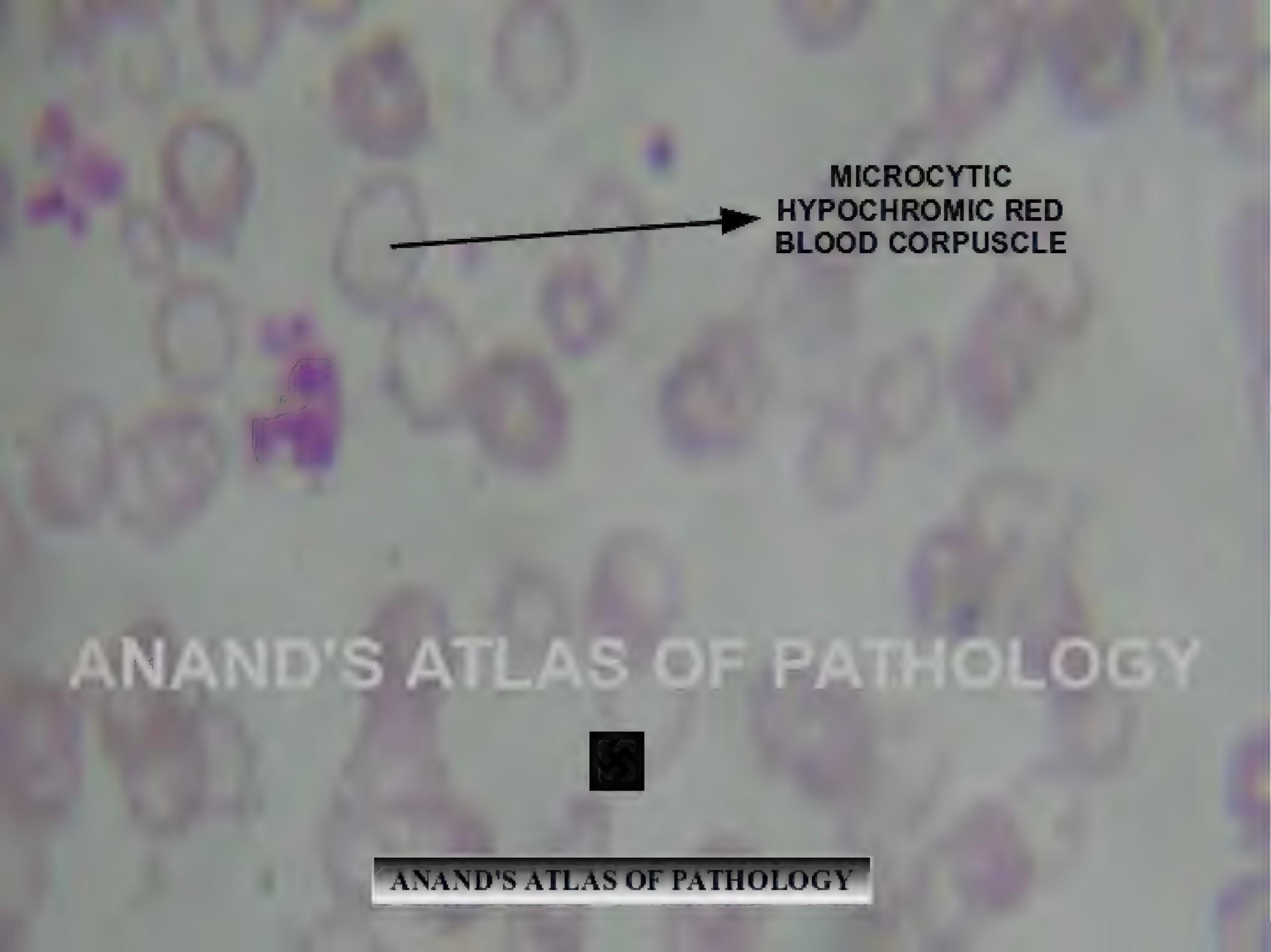
**THERE IS SEVERE REDUCTION
IN HAEMOGLOBIN %**

VERY COMMON IN WOMEN

**CAN ALSO OCCUR IN WORM INFESTATION
AND MALIGNANCY**

**PREGNANCY IS A PROBABLE
PHYSIOLOGICAL CAUSE**

**PERIPHERAL BLOOD SMEAR IS
THE COMMONEST INVESTIGATION**



MICROCYTIC
HYPOCHROMIC RED
BLOOD CORPUSCLE

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IRON DEFICIENCY ANAEMIA

MOST COMMONEST FORM OF NUTRITIONAL DEFICIENCY

MICROSCOPICALLY RBC'S ARE MICROCYTIC AND HYPOCHROMIC REFLECTING THE REDUCED MCV AND MCHC

IRON DEFICIENCY ANAEMIA IS USUALLY ACCCOMPANIED BY AN INCREASE IN THE PLATELET COUNT

PICTURE WILL ALSO SHOW NORMOBLASTIC HYPERPLASIA

HAEMOSIDERIN IN CYTOPLASM FORM LARGE CLUSTERS

NEUTROPHILIA

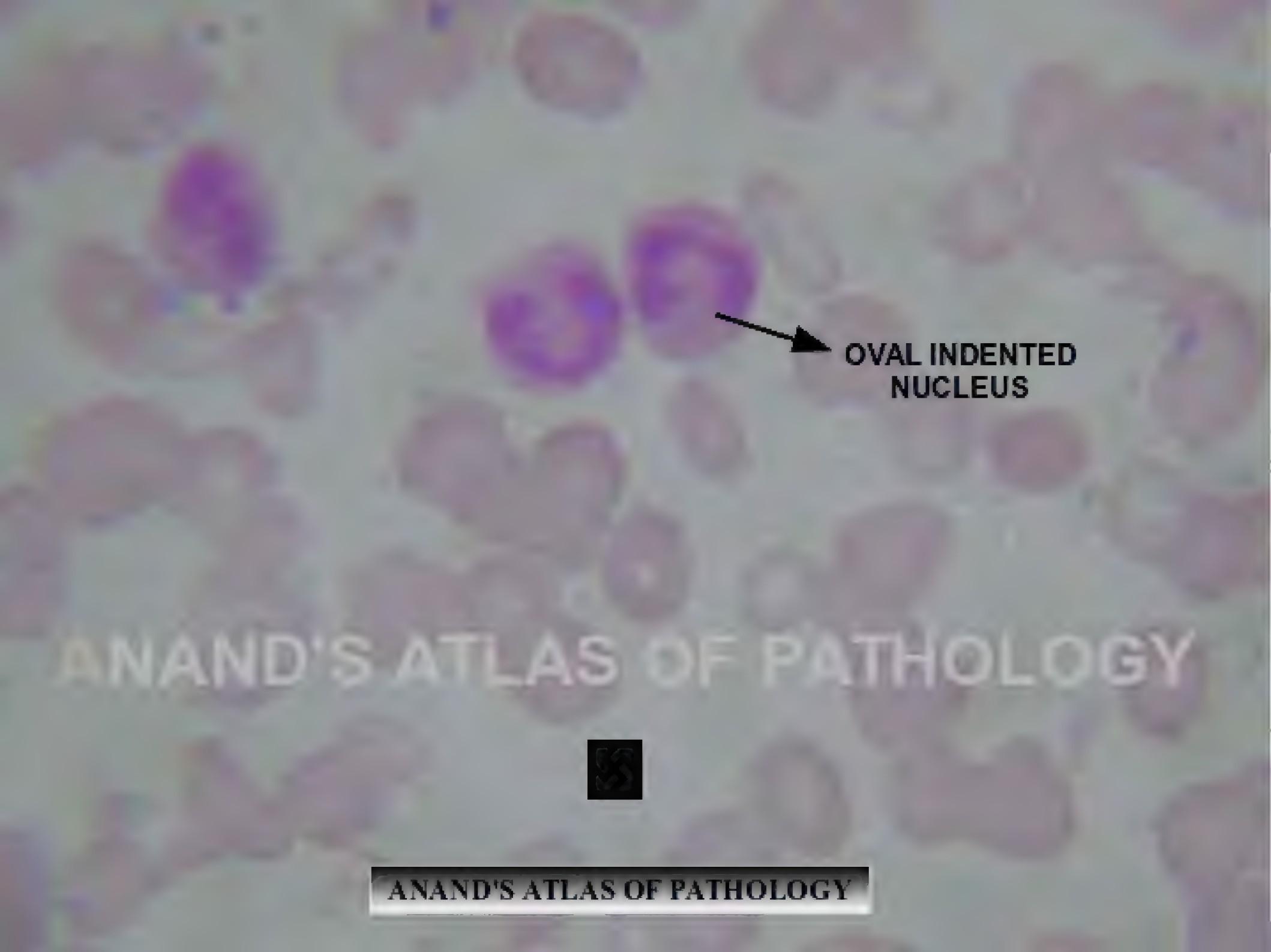
**PATIENT USUALLY PRESENTS
WITH FEVER AND MALAISE**

**COUGH WITH EXPECTORATION
IS PRESENT**

SPUTUM USUALLY RESEMBLES PUS

LUNG OPACITY IS SEEN IN AN XRAY

PERIPHERAL BLOOD SMEAR IS TAKEN



OVAL INDENTED
NUCLEUS

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NEUTROPHILIA

NEUTROPHILIA IS RELATIVELY A SELECTIVE INCREASE IN POLYMORPHONUCLEAR CELLS INDUCED BY BACTERIAL INFECTIONS
IT IS BASICALLY A NON NEOPLASTIC DISORDER OF WBC'S
MICROSCOPICALLY THERE ARE A LARGE NUMBER OF ATYPICAL LYMPHOCYTES
LYMPHOCYTES ARE CHARACTERISED BY ABUNDANT CYTOPLASM CONTAINING MULTIPLE CLEAR VACUOLATIONS AND AN OVAL INDENTED OR FOLDED NUCLEUS

EOSINOPHILIA

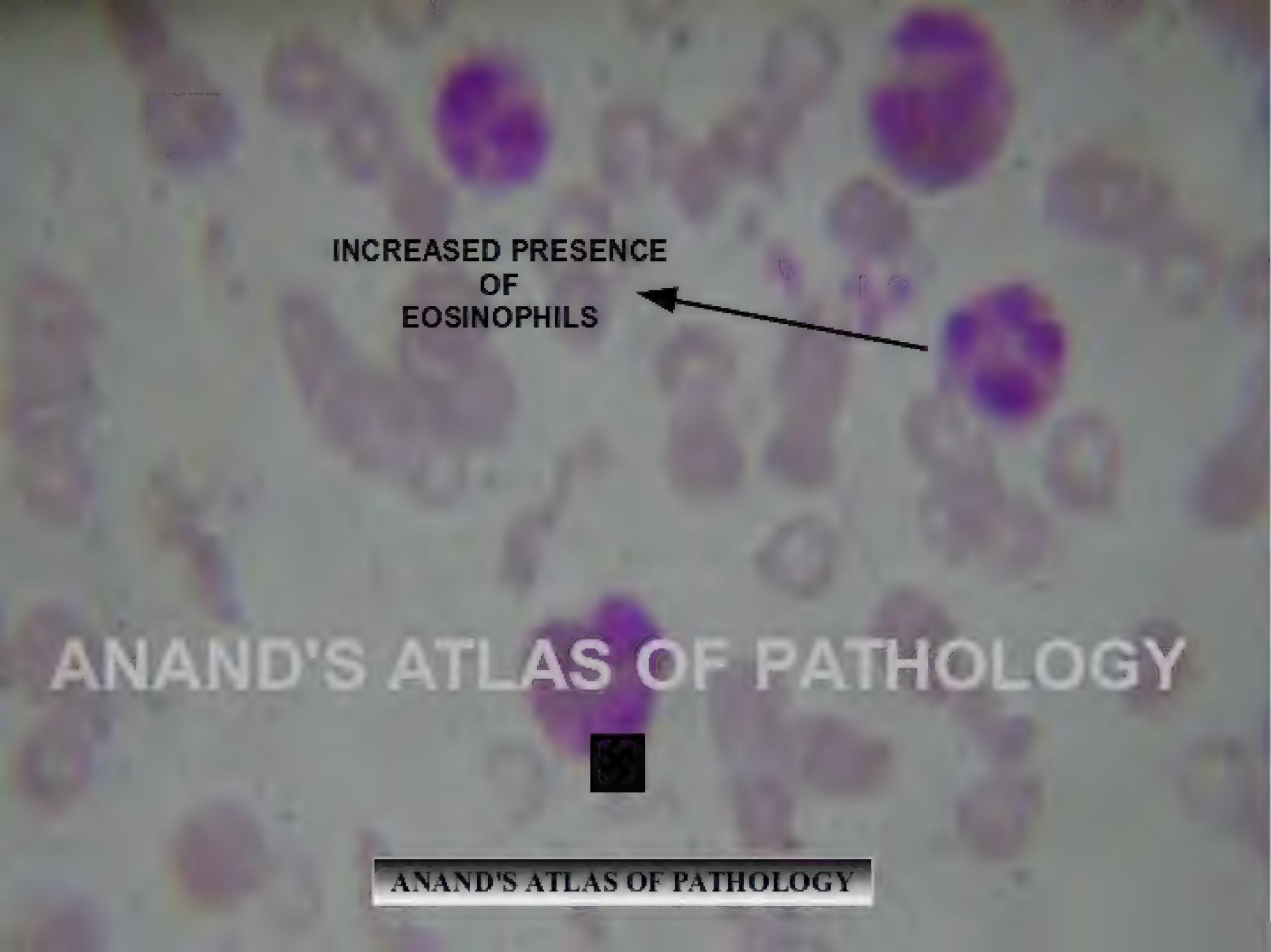
OCCURS IN YOUNG INDIVIDUALS

**PATIENTS PRESENT WITH FEVER AND
ASSOCIATED RIGORS**

**THERE IS UNILATERAL
PITTING OEDEMA IN
THE LOWER LIMB**

PERIPHERAL BLOOD SMEAR

IS DONE



A black and white photomicrograph of a tissue sample. Numerous small, dark, granular cells are scattered throughout the field. A prominent cluster of these cells is highlighted with a black arrow pointing from the text 'INCREASED PRESENCE OF EOSINOPHILS' located in the upper left quadrant. The overall appearance is that of a histological section with hematoxylin staining.

**INCREASED PRESENCE
OF
EOSINOPHILS**

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EOSINOPHILIA

IT IS AN INCREASED COUNT OF EOSINOPHILS IN BLOOD DUE TO PARASITIC INFECTIONS AND ALLERGIC RESPONSES

THEY MIGRATE INTO TISSUES DISEASED BY PARASITES

THE EOSINOPHILS MIGRATE TOWARDS INFECTED TISSUE BECAUSE OF EOSINOPHIL CHEMOTACTIC FACTOR SECRETED BY MAST CELLS AND BASOPHILS

EOSINOPHILS ALSO DETOXIFY INFLAMMATION INDUCING SUBSTANCES SECRETED BY THE MAST CELLS AND BASOPHILS

ACUTE MYELOID LEUKEMIA

AFFECTS YOUNG INDIVIDUALS

**PRESENTS WITH HISTORY OF
FEVER DURATION OF
THREE MONTHS AND ABOVE**

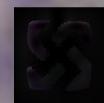
**THERE IS PRESENCE OF SEVERE
ANEMIA**

**PERIPHERAL BLOOD SMEAR
IS DONE**



AUER ROD

ANAND'S ATLAS OF PATHOLOGY



ANAND'S ATLAS OF PATHOLOGY

ACUTE MYELOID LEUKEMIA

MYELOBLASTS CAN BE DIFFERENTIATED FROM LYMPHOBLASTS BY GIEMSA STAIN

BLAST CELLS HAVE DELICATE NUCLEAR CHROMATIN

THREE TO FIVE NUCLEOLI ARE SEEN

FINE AZUROPHILIC GRANULES IN CYTOPLASM

DISTINCTIVE RED STAINING ROD LIKE

STRUCTURES CALLED AS AUER RODS ARE PRESENT

AUER RODS ARE FOUND ONLY IN NEOPLASTIC MYELOBLASTS

ACUTE LYMPHOCYTIC LEUKEMIA

Major Dr A Anand Major Dr A Anand

SEEN IN ADOLESCENTS

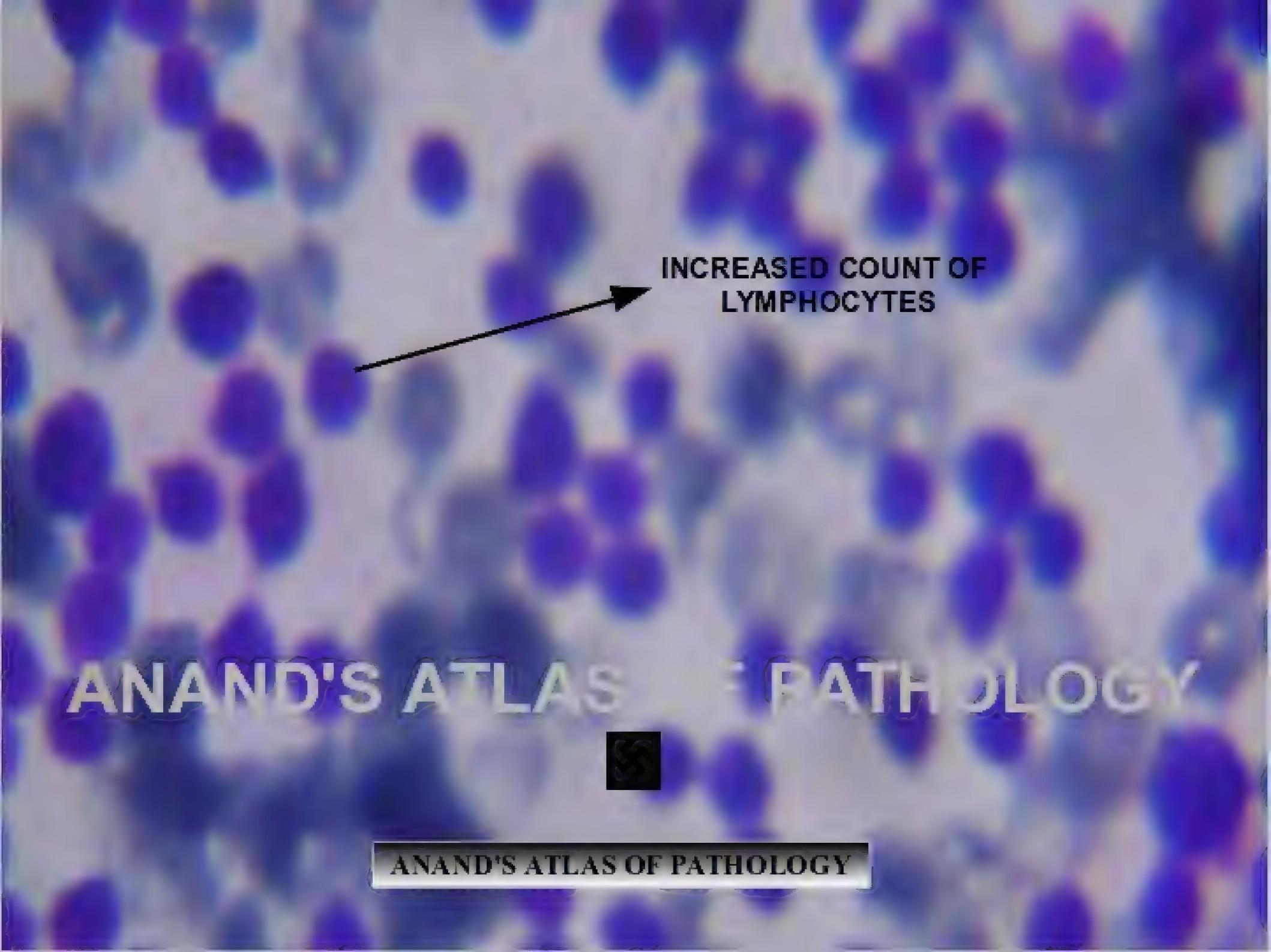
**PRESENTS WITH GENERALISED
LYMPHADENOPATHY**

SPLENOMEGALY

HEPATOMEGLY

LOSS OF WEIGHT

PERIPHERAL BLOOD SMEAR IS DONE



INCREASED COUNT OF
LYMPHOCYTES

A black arrow points from the text "INCREASED COUNT OF LYMPHOCYTES" to a cluster of dark blue-stained cells within a tissue sample.

ANAND'S ATLAS OF PATHOLOGY



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ACUTE LYMPHOCYTIC LEUKEMIA

**LYMPHOCYTIC LEUKEMIAS ARE CAUSED BY
INCREASED PRODUCTION OF LYMPHOID
CELLS**

**THE NUCLEI ARE COARSE AND HAVE
CLUMPED CHROMATIN
ONLY ONE OR TWO NUCLEOLI WILL BE
PRESENT**

**CYTOPLASM CONTAINS LARGE AGGREGATES
OF PAS POSITIVE MATERIAL
TO DIFFERENTIATE FROM AML -
MYELOBLASTS ARE PEROXIDASE POSITIVE**

CHRONIC MYELOID LEUKEMIA

**USUALLY OCCURS IN THE
5TH DECADE**

**PATIENT PRESENTS WITH FEVER AND
MODERATE WEIGHT LOSS**

MASSIVE SPLENOmegaly

**DRAGGING PAIN IN THE LEFT SIDE
OF ABDOMEN**

PERIPHERAL BLOOD SMEAR IS DONE



MATURE NEUTROPHILS

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ANAND'S ATLAS OF PATHOLOGY

CHRONIC MYELOID LEUKEMIA

Major.Dr.A.Anand Major.Dr.A.Anand

PERIPHERAL SMEAR WILL SHOW A LARGE NUMBER OF MATURE NEUTROPHILS SOME METAMYELOCYTES AND MYELOCYTES INCREASED EOSINOPHILS, BASOPHILS AND NUCLEATED RED CELLS WILL BE SEEN THERE WILL A DRAMATIC INCREASE IN THE NUMBER OF MATURE CIRCULATING MYELOBLASTS HISTOLOGICALLY THE PICTURE IS THAT OF NORMOCYTIC NORMOCHROMIC ANAEMIA

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Major.Dr. Dr.A.Anand

CHRONIC LYMPHOCYTIC LEUKEMIA

OCCURS IN THE 6TH DECADE

PATIENT PRESENTS WITH

FEVER, FATIGUE AND WEIGHT LOSS

GENERALISED LYMPHADENOPATHY IS PRESENT

**DIFFERENTIAL COUNT SHOWS
ABNORMALLY HIGH LEUKOCYTOSIS**

PERIPHERAL BLOOD SMEAR IS DONE



**MITOTICALLY ACTIVE
PROLYMPHOCYTE**

ANAND'S ATLAS OF PATHOLOGY



ANAND'S ATLAS OF PATHOLOGY

CHRONIC LYMPHOCYTIC LEUKEMIA

MILD TO GRADUALLY INCREASING ANAEMIA IS

SEEN

**THERE IS A MODERATE AMOUNT OF
LEUKOCYTOSIS**

**95% OF THE CELLS ARE LYMPHOCYTES
PREDOMINANTLY OF SMALL CELL TYPE**

**THE FOCI OF MITOTICALLY ACTIVE
PROLYMPHOCYTES ARE CALLED AS
PROLIFERATION CENTRES WHICH IS A THE
DIAGNOSTIC FEATURE OF CHRONIC
LYMPHOCYTIC LEUKEMIA**

MULTIPLE MYELOMA

OCCURS IN THE 6TH DECADE

PREPONDERANT IN MALES

PATIENTS PRESENT WITH LOW BACK ACHE

ABNORMALLY ELEVATED ESR COUNT IS SEEN

PROTEINURIA IS PRESENT

**XRAY OF SKULL REVEALS
PUNCHED OUT LESIONS**

PERIPHERAL SMEAR IS DONE

INCREASED COUNT OF
PLASMA CELLS



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MULTIPLE MYELOMA

**MULTIPLE MYELOMA CAUSES DESTRUCTIVE
BONE LESIONS**

**MICROSCOPICALLY THERE IS AN INCREASE OF
PLASMA CELLS**

**THE NEOPLASTIC PLASMA CELLS RESEMBLE
NORMAL MATURE PLASMA CELLS**

**THESE CELLS SHOW ABNORMAL FEATURES
SUCH AS PROMINENT NUCLEOLI, ABNORMAL
CYTOPLASMIC INCLUSIONS WHICH CONTAIN
IMMUNOGLOBULIN**

SECTION - 4

**HISTOPATHOLOGY
GROSS SPECIMENS**

LIST OF GROSS SPECIMENS

ACUTE APPENDICITIS

**MUCINOUS CYSTADENOMA OF
OVARY**

DERMOID CYST

LEIOMYOMA

RENAL CELL CARCINOMA

OSTEOSARCOMA

LIST OF GROSS SPECIMENS

OSTEOCLASTOMA

TUBERCULOSIS OF LUNG

INTESTINAL POLYPS

CIRRHOSIS OF LIVER

SECONDARIES OF LIVER

CARCINOMA OF BREAST

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Major.Dr.A.Anand Major.Dr.A.Anand

Major.Dr. Dr. A. Anand Dr. A. Anand

LIST OF GROSS SPECIMENS

MULTINODULAR GOITRE

**SQUAMOUS CELL CARCINOMA
OF FOOT**

CARCINOMA OF STOMACH

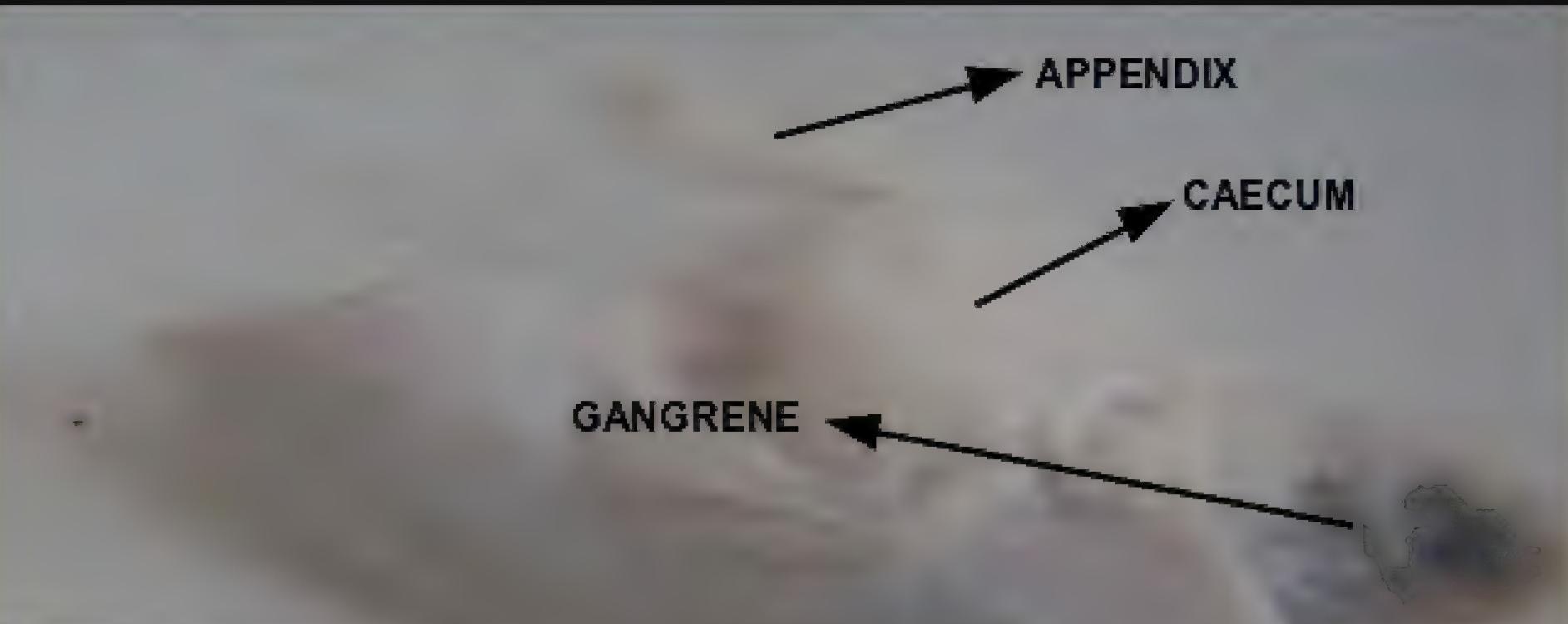
CHOLELITHIASIS

RENAL CALCULII

TRICHOBEZOAR

Major Dr A Anand and Major Dr A Anand

ACUTE APPENDICITIS



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ACUTE APPENDICITIS

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THE ORGAN APPEARS TURGID AND DUSKY RED DUE TO INFLAMMATION AND HAEMORRHAGES IN THE MUCOUS MEMBRANE

IN ADVANCED CASES IT MIGHT APPEAR DARKISH GREEN TO BLACK BECAUSE OF GANGRENOUS CHANGE

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MUCINOUS CYSTADENOMA OF OVARY

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CYST CAVITY

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MUCINOUS CYSTADENOMA OF OVARY

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USUALLY A BENIGN TUMOUR

**RARELY UNDERGOES MALIGNANT
CHANGE**

CYST CAVITIES ARE SEEN

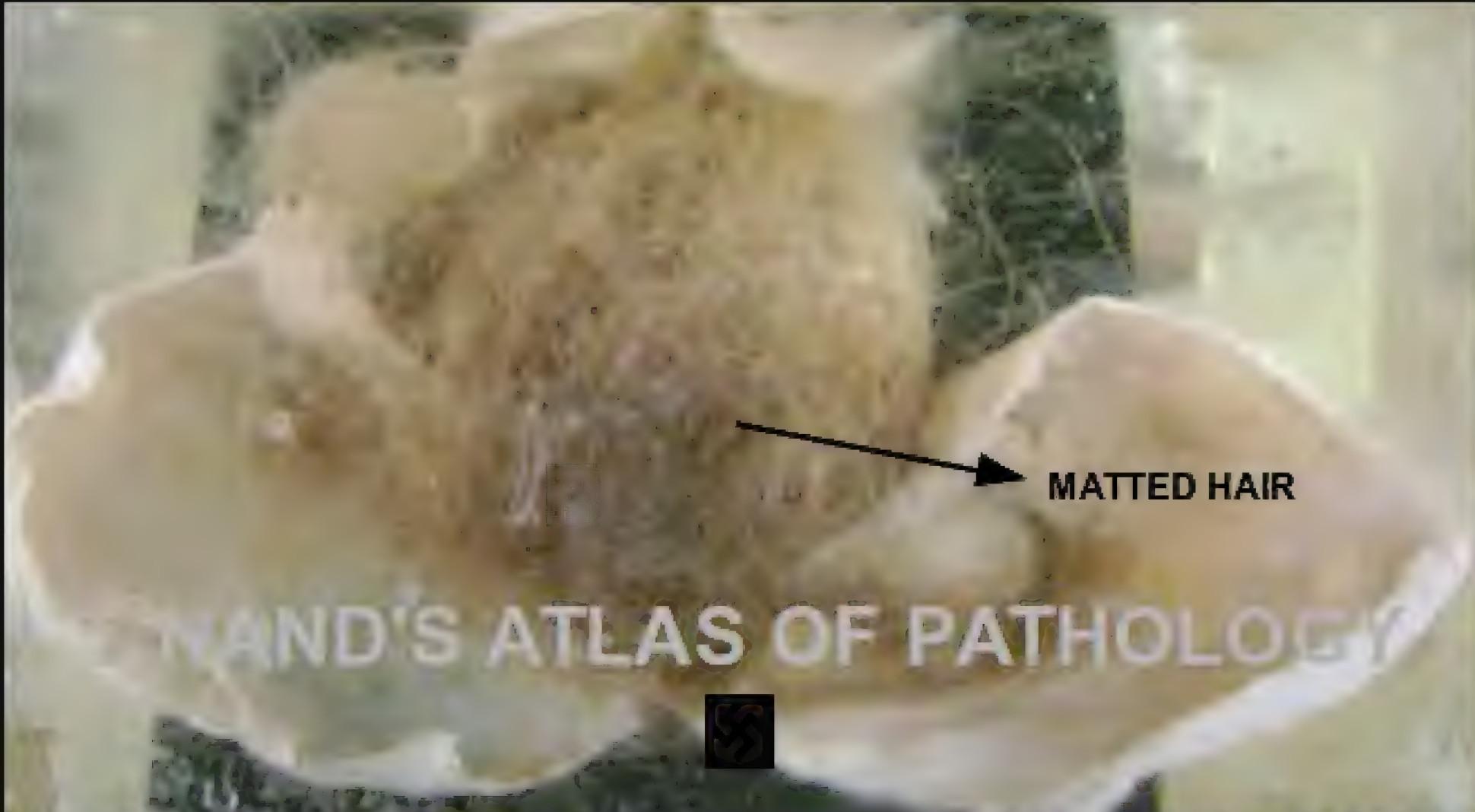
DELICATE PAPILLARY TUMOUR

**GROWTHS CAN BE SEEN IN THE
PERIPHERY**

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DERMOID CYST

Major Dr A Anand Major Dr A Anand



Major.Dr

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DERMOID CYST

Major Dr A Anand Major Dr A Anand

AFFECTED ORGAN IS OVARY

**THESE NEOPLASMS ARE CAUSED BY
ECTODERMAL DIFFERENTIATION OF
TOTIPOTENT GERM CELLS**

**MATTED HAIR BEARING EPITHELIAL
LINING IS SEEN**

**SOMETIMES IT CAN HAVE NODULAR
PROJECTIONS FROM WHICH TEETH
CAN PROTRUDE**

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LEIOMYOMA OF UTERUS

WHORLED FIBROID
MASS

ATLAS OF PATHOLOGY



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LEIOMYOMA OF UTERUS

**TUMOUR IS A SHARPLY
CIRCUMSCRIBED FIRM
GRAY MASS
PRESENTS A
CHARACTERISTIC
WHORLED CUT SURFACE**

RENAL CELL CARCINOMA

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RENAL CELL CARCINOMA

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**KIDNEY IS USUALLY SOLITARY AND
LARGE**

**TUMOUR GROWTH IS USUALLY
CONFINED TO THE CORTEX**

**PROMINENT AREAS OF CYSTIC
SOFTENING OR HAEMORRHAGE ARE
SEEN**

**THE MARGINS OF THE TUMOUR ARE
WELL DEFINED**

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OSTEOSARCOMA

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DESTRUCTION OF CORTEX



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DR A. ANAND

OSTEOSARCOMA

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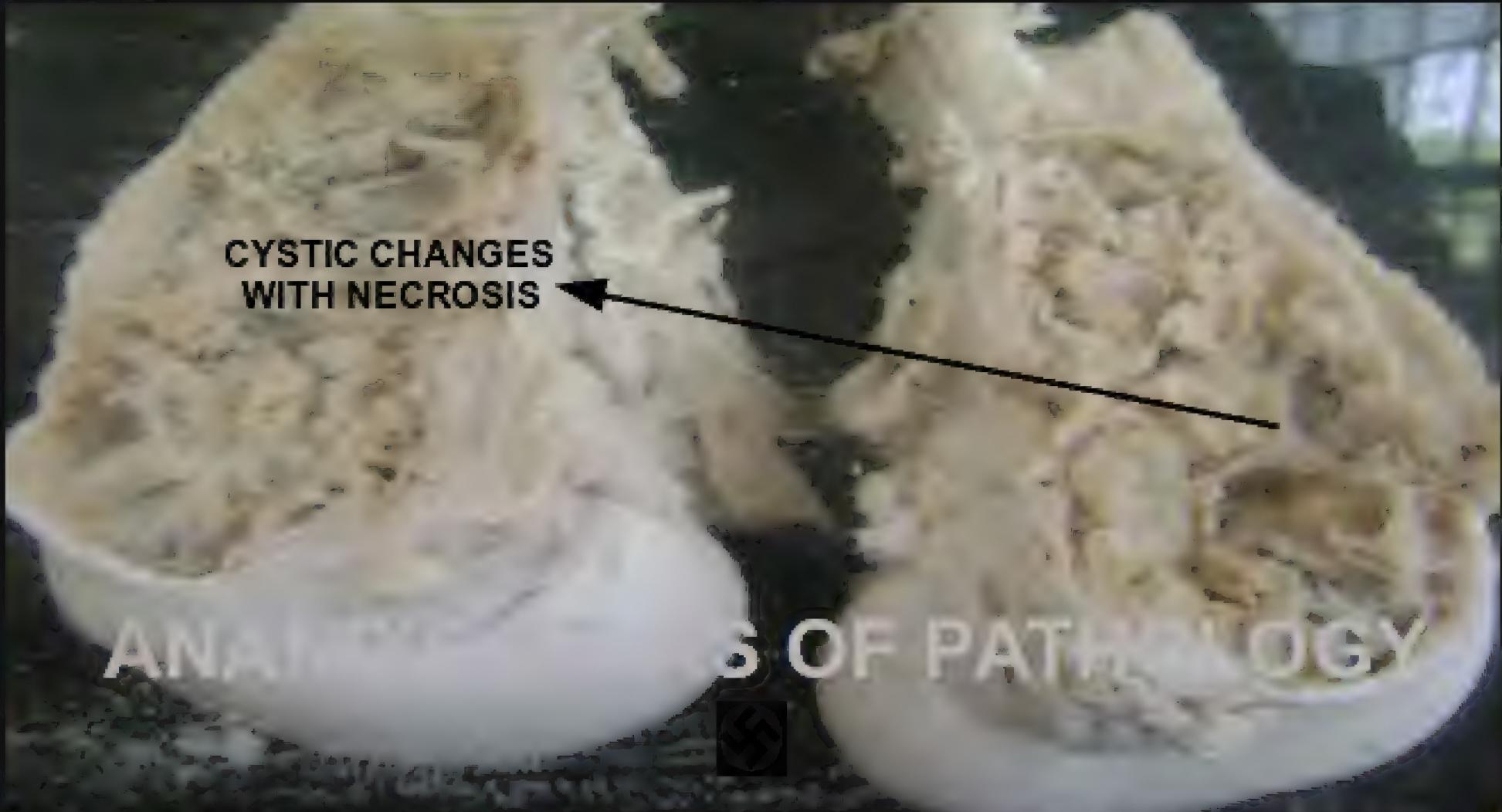
**IT IS A LARGE ILL DEFINED LESION
IN THE METAPHYSEAL REGION OF
THE AFFECTED BONE
TUMOUR HAS DESTROYED THE
CORTEX AND INVADED INTO THE
MARROW CAVITY AND OUTWARD
INTO ADJACENT SOFT TISSUES**

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Major.Dr.A.Anand Major.Dr.A.Anand

OSTEOCLASTOMA



OSTEOCLASTOMA

USUALLY ENDS OF LONG BONE ARE

AFFECTED

TUMOUR IS ALWAYS SOLITARY

**TUMOUR ERODES INTO THE CORTEX AND
MAY EXTEND OUTSIDE THROUGH THE
OVERLYING PERIOSTEUM**

**PRESENTS A DARK BROWN APPEARANCE
DUE TO ABUNDANT VASCULARITY**

**AREAS OF NECROSIS AND CYSTIC CHANGES
ARE SEEN**

TUBERCULOSIS OF LUNG



A black and white photomicrograph of lung tissue. A prominent, dark, granular area of tissue destruction is visible in the lower-left portion of the field. A solid black arrow points from the word "CASEATION" to this specific area. The surrounding tissue appears relatively normal with some architectural detail.

CASEATION

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TUBERCULOSIS OF LUNG

**LUNGS ARE RIDDLED WITH
GRAY WHITE AREAS OF
CASEATION**

**MULTIPLE AREAS OF
SOFTENING AND CAVITATION
ARE SEEN**

Major.Dr.

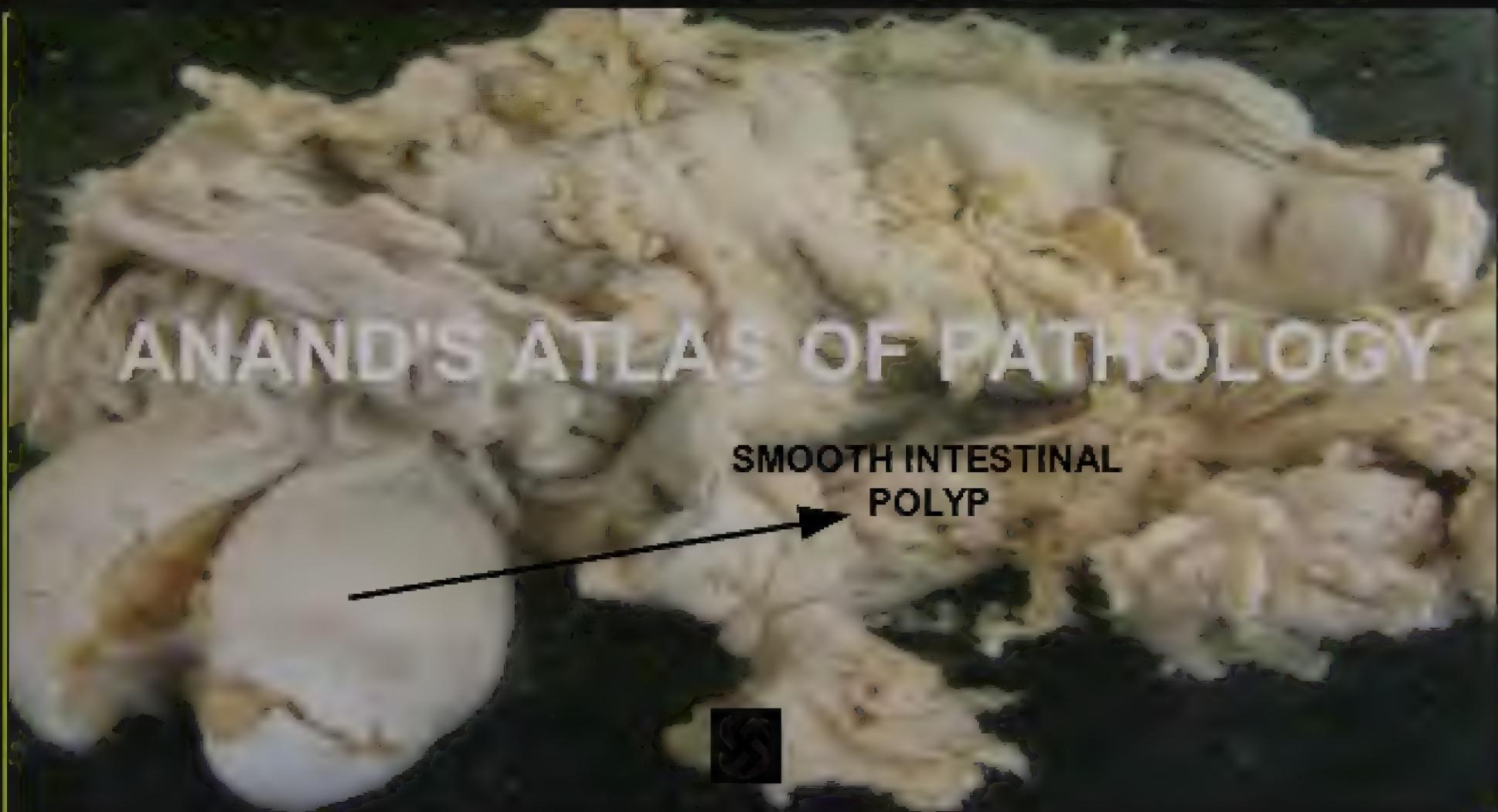
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INTESTINAL POLYPS

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INTESTINAL POLYPS

MULTIPLE HEMISPERICAL SMOOTH PROTRUSIONS ARE SEEN ON THE MUCOSA THEY ARE NIPPLE LIKE USUALLY AFFECTS THE RECTOSIGMOID JUNCTION

CIRRHOSIS OF LIVER



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CIRRHOSIS OF LIVER

**SPECIMEN OF LIVER
SHOWING IRREGULARLY
SIZED NODULES
PUNCTUATING THE SURFACE
OF THE LIVER
THE NODULES ARE
SEPARATED BY SCAR TISSUE**

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SECONDARIES - LIVER

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METASTATIC NODULE



SECONDARIES - LIVER

WELL ROUNDED GROWTHS OF VARYING SIZES SEEN ON THE SURFACE OF THE LIVER

POSSIBLE PRIMARY SITES OF MALIGNANCY

IS BY HAEMATOGENOUS ROUTE FROM

ABDOMINAL ORGANS AS ALL PORTAL

BLOOD IS DRAINED INTO THE LIVER

COMMONEST SITES OF METASTATIC

SECONDARIES INTO THE LIVER ARE FROM

COLON, LUNGS AND BREAST

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Major.Dr. Dr.A.Anand

CARCINOMA OF BREAST

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NECROTIC TUMOUR
TISSUE



CARCINOMA OF BREAST

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DUE TO DESMOPLASTIC RESPONSE,

NORMAL BREAST FAT IS REPLACED

AND FORMS A HARD PALPABLE MASS

DIMPLING OF SKIN IS SEEN

RETRACTION OF NIPPLE IS SEEN

FIXITY TO CHEST WALL IS SEEN IN

INVASIVE CARCINOMA

MULTINODULAR GOITRE



52

MULTINODULAR GOITRE

THYROID GLAND IS IRREGULARLY ENLARGED

MULTIPLE IRREGULARLY PLACED NODULES OF VARYING SIZES AND SHAPE ARE SEEN

THE GLAND APPEARS COARSE AND AREAS OF FIBROSIS AND CYSTIC CHANGES ARE SEEN

SQUAMOUS CELL CARCINOMA OF FOOT

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Major Dr A Anand

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SQUAMOUS CELL CARCINOMA OF FOOT

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ARISES COMMONLY FROM SUNLIGHT EXPOSED SURFACES

FOOT IS A COMMON SITE

OLD BURNS SCAR IS A PREDISPOSING FACTOR

LESIONS ARE NODULAR, THE GROWTH IS LIKE THAT OF A CAULIFLOWER

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Major Dr A Anand Major Dr A Anand

Major Dr A Anand Major Dr A Anand

CARCINOMA OF STOMACH



TUMOUR MASS

53

CARCINOMA OF STOMACH

PYLORUS AND ANTRUM ARE THE COMMONLY AFFECTED SITES
THERE IS PROTRUSION OF TUMOUR MASS INTO THE LUMEN IN EXCAVATED TYPE, A SHALLOW OR DEEPLY EROSIVE CRATER IS SEEN

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Major Dr A Anand Major Dr A. Anand

CHOLELITHIASIS

INFLAMMED MUCOSA
OF GALL BLADDER

This image shows an endoscopic view of the interior of a gallbladder. The mucosal lining appears thickened and discolored, indicating inflammation. An arrow points to this area with the label "INFLAMED MUCOSA OF GALL BLADDER".

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CALCULII

This image shows several yellowish, irregularly shaped gallstones (calculi) scattered across a dark, textured surface. An arrow points to one of the stones with the label "CALCULII".

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CHOLELITHIASIS

THE GALL BLADDER MUCOSA IS IRREGULAR DUE TO CHRONIC INFLAMMATION

MECHANICAL MANIPULATION OF GALL BLADDER CAUSES FRAGMENTATION OF GALL STONES

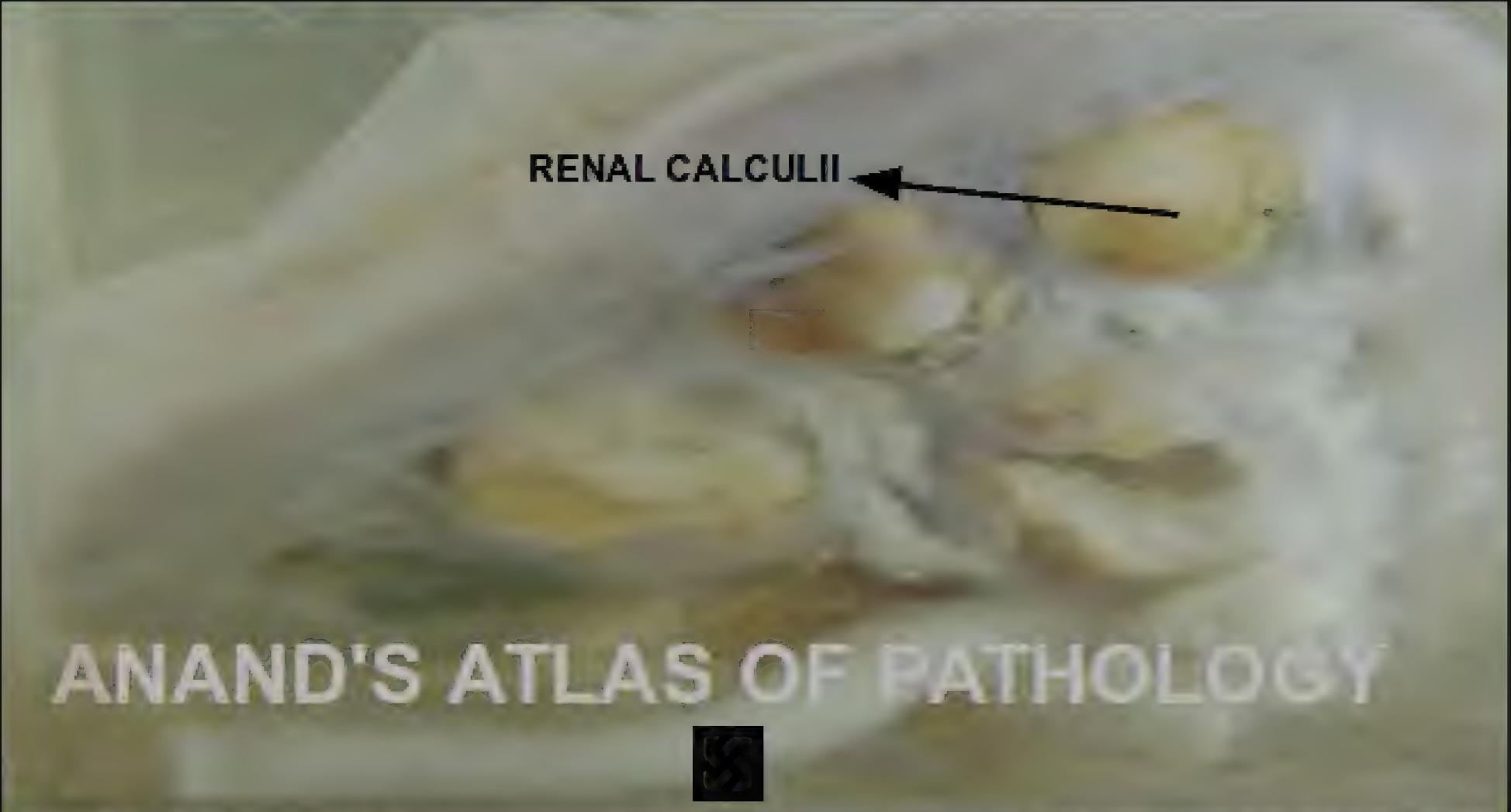
CALCULII ARE USUALLY CHOLESTEROL STONES

CHOLESTEROL STONES ARE USUALLY YELLOW, MULTIPLE AND HAVE FACETED SURFACES

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RENAL CALCULII

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A photograph of a kidney specimen showing multiple yellowish, calcified deposits (renal calculi) scattered across the renal cortex and pelvis. A black arrow points from the text 'RENAL CALCULII' to one of these calculi.

RENAL CALCULII

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RENAL CALCULII

ALSO CALLED AS UROLITHIASIS

RENAL CALCULII ARE USUALLY UNILATERAL

COMMONEST SITES OF CALCULII ARE

RENAL PELVIS AND CALYCES

MANY STONES ARE FOUND

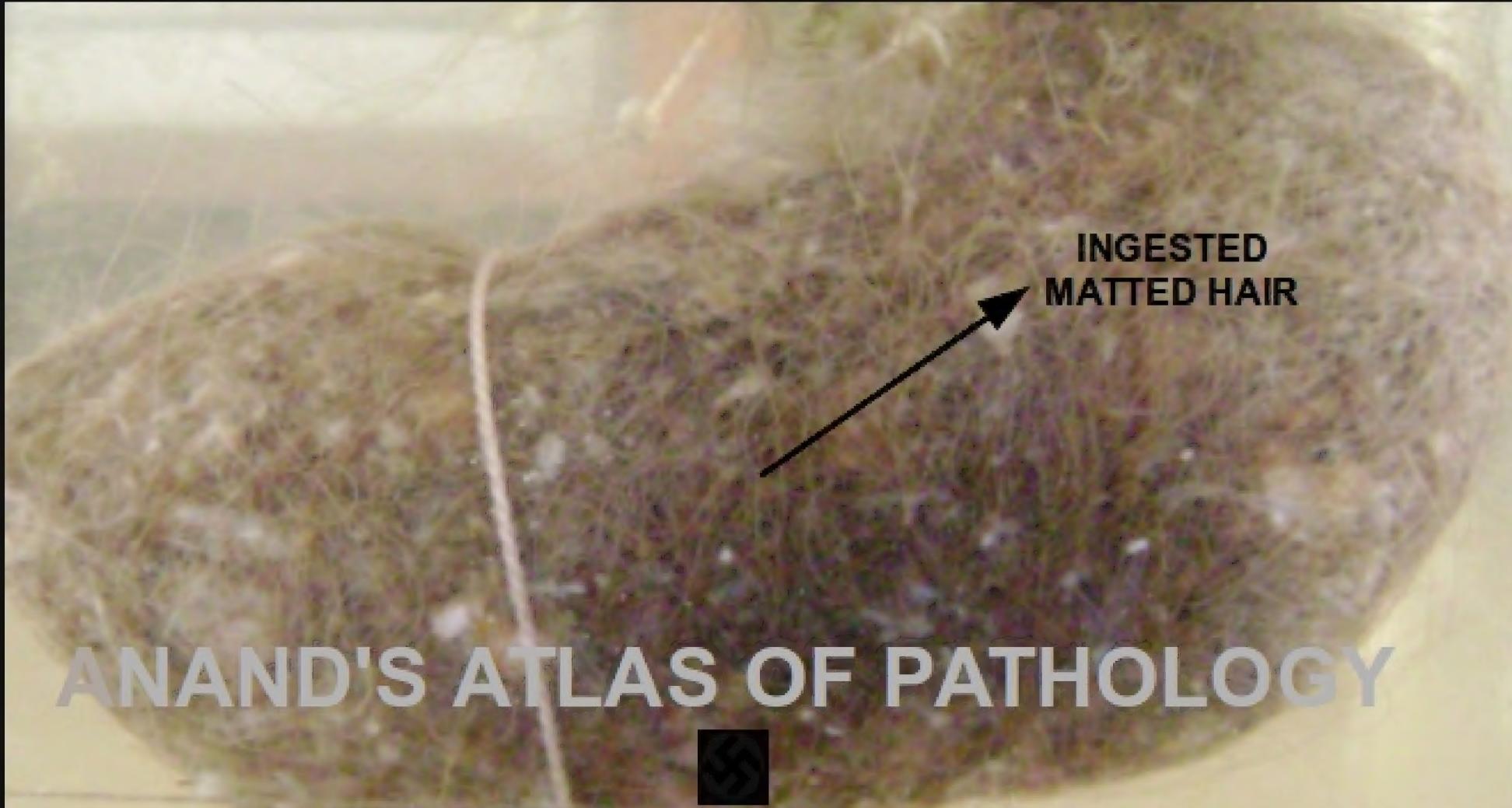
STAGHORN CALCULII IS DUE TO

PROGRESSIVE ACCUMULATION OF SALTS

MASSIVE STONES ARE USUALLY COMPOSED

OF MAGNESIUM AMMONIUM PHOSPHATE

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TRICHOBEZOAR
Major.Dr A.Anand Major.Dr A.Anand



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Major.Dr.

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Dr.A.Anand

TRICHOBEZOAR

TRICHOBEZOAR OCCURS ALMOST EXCLUSIVELY IN FEMALES

80% OF THE PATIENTS SUFFER FROM PSYCHIATRIC DISORDERS

TRICHOBEZOAR RESULTS FROM INGESTION OF HAIR

PATHOLOGICALLY IT GIVES RISE TO GASTRODUODENAL ULCERATION



THANK YOU

Anand's Atlas of Pathology

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